

• Riverside Literature Series •

BURROUGHS'S
Sharp Eyes and
Other Papers

Houghton, Mifflin Co.

The D.H. Hill Library



North Carolina State College

QH81
B9563

THE ALICAT BOOK SHOP
One of America's Biggest Used-Book Shops
Ask Us About the Books You Want
287 S. BROADWAY YONKERS 5, N.Y.

QH81

111187

B9563

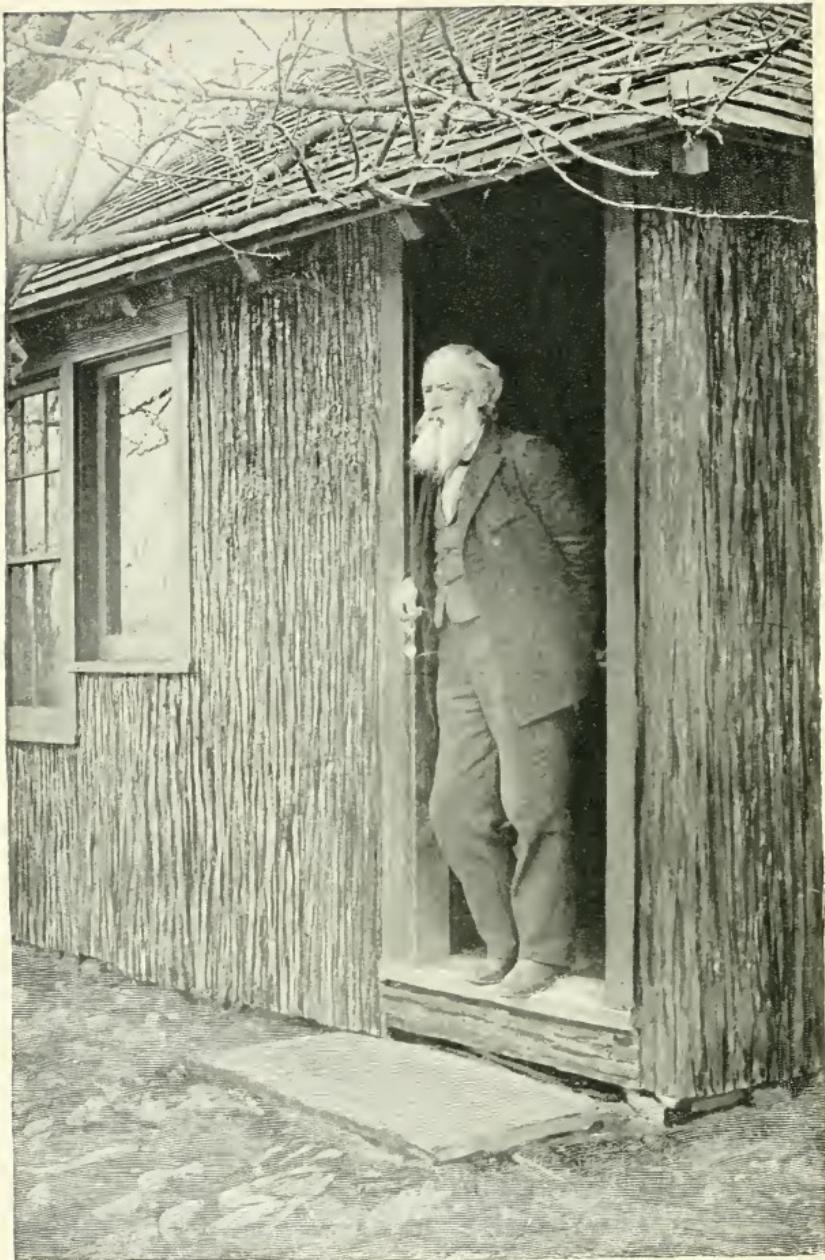
Burroughs

111187

This book may be kept out TWO WEEKS
ONLY, and is subject to a fine of FIVE
CENTS a day thereafter. It is due on the
day indicated below:

FL 1313
MAY 1 1978





AT THE STUDY DOOR

The Riverside Literature Series.

SHARP EYES
AND OTHER PAPERS

BY

JOHN BURROUGHS



HOUGHTON, MIFFLIN AND COMPANY

Boston: 4 Park Street; New York: 85 Fifth Avenue

Chicago: 378-388 Wabash Avenue

The Riverside Press, Cambridge

CONTENTS.

	PAGE
SHARP EYES	3
THE APPLE	25
A TASTE OF MAINE BIRCH	41
WINTER NEIGHBORS	65
NOTES BY THE WAY	
I. The Weather-wise Muskrat	84
II. Cheating the Squirrels	88
III. Fox and Hound	89
IV. The Woodchuck	92

Copyright, 1875, 1879, 1881, and 1886,
By JOHN BURROUGHS.

All rights reserved.

SHARP EYES AND OTHER PAPERS.

SHARP EYES.

NOTING how one eye seconds and reinforces the other, I have often amused myself by wondering what the effect would be if one could go on opening eye after eye to the number say of a dozen or more. What would he see? Perhaps not the invisible — not the odors of flowers nor the fever germs in the air — not the infinitely small of the microscope nor the infinitely distant of the telescope. This would require, not more eyes so much as an eye constructed with more and different lenses; but would he not see with augmented power within the natural limits of vision? At any rate some persons seem to have opened more eyes than others, they see with such force and distinctness; their vision penetrates the tangle and obscurity where that of others fails like a spent or impotent bullet. How many eyes did Gilbert White open? how many did Henry Thoreau? how many did Audubon? how many does the hunter, matching his sight against the keen and alert sense of a deer or a moose, or a fox or a wolf? Not outward eyes, but inward. We open another eye whenever we see beyond the first general features or outlines of things — whenever we grasp the special details and characteristic markings that this mask covers. Science confers new powers of vision.

111187

D. H. HILL LIBRARY

North Carolina State College

Whenever you have learned to discriminate the birds, or the plants, or the geological features of a country, it is as if new and keener eyes were added.

Of course one must not only see sharply, but read aright what he sees. The facts in the life of Nature that are transpiring about us are like written words that the observer is to arrange into sentences. Or the writing is in cipher and he must furnish the key. A female oriole was one day observed very much preoccupied under a shed where the refuse from the horse stable was thrown. She hopped about among the barn fowls, scolding them sharply when they came too near her. The stable, dark and cavernous, was just beyond. The bird, not finding what she wanted outside, boldly ventured into the stable, and was presently captured by the farmer. What did she want? was the query. What, but a horsehair for her nest which was in an apple-tree near by; and she was so bent on having one that I have no doubt she would have tweaked one out of the horse's tail had he been in the stable. Later in the season I examined her nest and found it sewed through and through with several long horse-hairs, so that the bird persisted in her search till the hair was found.

Little dramas and tragedies and comedies, little characteristic scenes, are always being enacted in the lives of the birds, if our eyes are sharp enough to see them. Some clever observer saw this little comedy played among some English sparrows and wrote an account of it in his newspaper; it is too good not to be true: A male bird brought to his box a large, fine goose feather, which is a great find for a sparrow and much coveted. After he had deposited his prize and chattered his gratulations over it he went away in

quest of his mate. His next-door neighbor, a female bird, seeing her chance, quickly slipped in and seized the feather,—and here the wit of the bird came out, for instead of carrying it into her own box she flew with it to a near tree and hid it in a fork of the branches, then went home, and when her neighbor returned with his mate was innocently employed about her own affairs. The proud male, finding his feather gone, came out of his box in a high state of excitement, and, with wrath in his manner and accusation on his tongue, rushed into the cot of the female. Not finding his goods and chattels there as he had expected, he stormed around a while, abusing everybody in general and his neighbor in particular, and then went away as if to repair the loss. As soon as he was out of sight, the shrewd thief went and brought the feather home and lined her own domicile with it.

I was much amused one summer day in seeing a bluebird feeding her young one in the shaded street of a large town. She had captured a cicada or harvest-fly, and after bruising it a while on the ground flew with it to a tree and placed it in the beak of the young bird. It was a large morsel, and the mother seemed to have doubts of her chick's ability to dispose of it, for she stood near and watched its efforts with great solicitude. The young bird struggled valiantly with the cicada, but made no headway in swallowing it, when the mother took it from him and flew to the sidewalk, and proceeded to break and bruise it more thoroughly. Then she again placed it in his beak, and seemed to say, "There, try it now," and sympathized so thoroughly with his efforts that she repeated many of his motions and contortions. But the great fly was unyielding, and, indeed, seemed ridiculously dispropor-

tioned to the beak that held it. The young bird fluttered and fluttered and screamed, "I'm stuck, I'm stuck," till the anxious parent again seized the morsel and carried it to an iron railing, where she came down upon it for the space of a minute with all the force and momentum her beak could command. Then she offered it to her young a third time, but with the same result as before, except that this time the bird dropped it; but she was at the ground as soon as the cicada was, and taking it in her beak flew some distance to a high board fence where she sat motionless for some moments. While pondering the problem how that fly should be broken, the male bluebird approached her, and said very plainly, and I thought rather curtly, "Give me that bug," but she quickly resented his interference and flew farther away, where she sat apparently quite discouraged when I last saw her.

The bluebird is a home bird, and I am never tired of recurring to him. His coming or reappearance in the spring marks a new chapter in the progress of the season; things are never quite the same after one has heard that note. The past spring the males came about a week in advance of the females. A fine male lingered about my grounds and orchard all the time, apparently waiting the arrival of his mate. He called and warbled every day, as if he felt sure she was within ear-shot, and could be hurried up. Now he warbled half-angrily or upbraidingly, then coaxingly, then cheerily and confidently, the next moment in a plaintive, far-away manner. He would half open his wings, and twinkle them caressingly, as if beckoning his mate to his heart. One morning she had come, but was shy and reserved. The fond male flew to a

knot-hole in an old apple-tree, and coaxed her to his side. I heard a fine confidential warble,—the old, old story. But the female flew to a near tree, and uttered her plaintive, homesick note. The male went and got some dry grass or bark in his beak, and flew again to the hole in the old tree, and promised unremitting devotion, but the other said “nay,” and flew away in the distance. When he saw her going, or rather heard her distant note, he dropped his stuff, and cried out in a tone that said plainly enough, “Wait a minute. One word, please,” and flew swiftly in pursuit. He won her before long, however, and early in April the pair were established in one of the four or five boxes I had put up for them, but not until they had changed their minds several times. As soon as the first brood had flown, and while they were yet under their parents’ care, they began another nest in one of the other boxes, the female, as usual, doing all the work, and the male all the complimenting.

A source of occasional great distress to the mother-bird was a white cat that sometimes followed me about. The cat had never been known to catch a bird, but she had a way of watching them that was very embarrassing to the bird. Whenever she appeared, the mother bluebird would set up that pitiful melodious plaint. One morning the cat was standing by me, when the bird came with her beak loaded with building material, and alighted above me to survey the place before going into the box. When she saw the cat, she was greatly disturbed, and in her agitation could not keep her hold upon all her material. Straw after straw came eddying down, till not half her original burden remained. After the cat had gone away, the bird’s alarm subsided, till, presently seeing the

coast clear, she flew quickly to the box and pitched in her remaining straws with the greatest precipitation, and, without going in to arrange them, as was her wont, flew away in evident relief.

In the cavity of an apple-tree but a few yards off, and much nearer the house than they usually build, a pair of high-holes, or golden-shafted woodpeckers, took up their abode. A knot-hole which led to the decayed interior was enlarged, the live wood being cut away as clean as a squirrel would have done it. The inside preparations I could not witness, but day after day, as I passed near, I heard the bird hammering away, evidently beating down obstructions and shaping and enlarging the cavity. The chips were not brought out, but were used rather to floor the interior. The woodpeckers are not nest-builders, but rather nest-carvers.

The time seemed very short before the voices of the young were heard in the heart of the old tree,—at first feebly, but waxing stronger day by day until they could be heard many rods distant. When I put my hand upon the trunk of the tree, they would set up an eager, expectant chattering; but if I climbed up it toward the opening, they soon detected the unusual sound and would hush quickly, only now and then uttering a warning note. Long before they were fully fledged they clambered up to the orifice to receive their food. As but one could stand in the opening at a time, there was a good deal of elbowing and struggling for this position. It was a very desirable one aside from the advantages it had when food was served; it looked out upon the great shining world, into which the young birds seemed never tired of gazing. The fresh air must have been a consideration

also, for the interior of a high-hole's dwelling is not sweet. When the parent birds came with food the young one in the opening did not get it all, but after he had received a portion, either on his own motion or on a hint from the old one, he would give place to the one behind him. Still, one bird evidently outstripped his fellows, and in the race of life was two or three days in advance of them. His voice was loudest and his head oftenest at the window. But I noticed that when he had kept the position too long, the others evidently made it uncomfortable in his rear, and, after "fidgeting" about a while, he would be compelled to "back down." But retaliation was then easy, and I fear his mates spent few easy moments at that look-out. They would close their eyes and slide back into the cavity as if the world had suddenly lost all its charms for them.

This bird was, of course, the first to leave the nest. For two days before that event he kept his position in the opening most of the time and sent forth his strong voice incessantly. The old ones abstained from feeding him almost entirely, no doubt to encourage his exit. As I stood looking at him one afternoon and noting his progress, he suddenly reached a resolution, — seconded, I have no doubt, from the rear, — and launched forth upon his untried wings. They served him well and carried him about fifty yards up-hill the first heat. The second day after, the next in size and spirit left in the same manner; then another, till only one remained. The parent birds ceased their visits to him, and for one day he called and called till our ears were tired of the sound. His was the faintest heart of all. Then he had none to encourage him from behind. He left the nest and clung to the outer

bowl of the tree, and yelped and piped for an hour longer; then he committed himself to his wings and went his way like the rest.

A young farmer in the western part of New York, who has a sharp, discriminating eye, sends me some interesting notes about a tame high-hole he once had.

"Did you ever notice," says he, "that the high-hole never eats anything that he cannot pick up with his tongue? At least this was the case with a young one I took from the nest and tamed. He could thrust out his tongue two or three inches, and it was amusing to see his efforts to eat currants from the hand. He would run out his tongue and try to stick it to the currant; failing in that, he would bend his tongue around it like a hook and try to raise it by a sudden jerk. But he never succeeded, the round fruit would roll and slip away every time. He never seemed to think of taking it in his beak. His tongue was in constant use to find out the nature of everything he saw; a nail-hole in a board or any similar hole was carefully explored. If he was held near the face he would soon be attracted by the eye and thrust his tongue into it. In this way he gained the respect of a number of half-grown cats that were around the house. I wished to make them familiar to each other, so there would be less danger of their killing him. So I would take them both on my knee, when the bird would soon notice the kitten's eyes, and leveling his bill as carefully as a marksman levels his rifle, he would remain so a minute when he would dart his tongue into the cat's eye. This was held by the cats to be very mysterious: being struck in the eye by something invisible to them. They soon acquired such a terror of him that they would avoid him and

run away whenever they saw his bill turned in their direction. He never would swallow a grasshopper even when it was placed in his throat; he would shake himself until he had thrown it out of his mouth. His 'best hold' was ants. He never was surprised at anything, and never was afraid of anything. He would drive the turkey gobbler and the rooster. He would advance upon them holding one wing up as high as possible, as if to strike with it, and shuffle along the ground toward them, scolding all the while in a harsh voice. I feared at first that they might kill him, but I soon found that he was able to take care of himself. I would turn over stones and dig into ant-hills for him, and he would lick up the ants so fast that a stream of them seemed going into his mouth unceasingly. I kept him till late in the fall, when he disappeared, probably going south, and I never saw him again."

My correspondent also sends me some interesting observations about the cuckoo. He says a large gooseberry bush standing in the border of an old hedge-row, in the midst of open fields, and not far from his house, was occupied by a pair of cuckoos for two seasons in succession, and, after an interval of a year, for two seasons more. This gave him a good chance to observe them. He says the mother-bird lays a single egg, and sits upon it a number of days before laying the second, so that he has seen one young bird nearly grown, a second just hatched, and a whole egg all in the nest at once. "So far as I have seen, this is the settled practice,—the young leaving the nest one at a time to the number of six or eight. The young have quite the look of the young of the dove in many respects. When nearly grown they are covered with

long blue pin-feathers as long as darning-needles, without a bit of plumage on them. They part on the back and hang down on each side by their own weight. With its curious feathers and misshapen body the young bird is anything but handsome. They never open their mouths when approached, as many young birds do, but sit perfectly still, hardly moving when touched." He also notes the unnatural indifference of the mother-bird when her nest and young are approached. She makes no sound, but sits quietly on a near branch in apparent perfect unconcern.

These observations, together with the fact that the egg of the cuckoo is occasionally found in the nests of other birds, raise the inquiry whether our bird is slowly relapsing into the habit of the European species, which always foists its egg upon other birds; or whether, on the other hand, it is not mending its manners in this respect. It has but little to unlearn or to forget in the one case, but great progress to make in the other. How far is its rudimentary nest — a mere platform of coarse twigs and dry stalks of weeds — from the deep, compact, finely woven and finely modeled nest of the goldfinch or king-bird, and what a gulf between its indifference toward its young and their solicitude! Its irregular manner of laying also seems better suited to a parasite like our cow-bird, or the European cuckoo, than to a regular nest-builder.

This observer, like most sharp-eyed persons, sees plenty of interesting things as he goes about his work. He one day saw a white swallow, which is of rare occurrence. He saw a bird, a sparrow he thinks, fly against the side of a horse and fill his beak with hair from the loosened coat of the animal. He saw a shrike pursue a chickadee, when the latter escaped by

taking refuge in a small hole in a tree. One day in early spring he saw two hen-hawks that were circling and screaming high in air, approach each other, extend a claw, and, clasping them together, fall toward the earth flapping and struggling as if they were tied together; on nearing the ground they separated and soared aloft again. He supposed that it was not a passage of war but of love, and that the hawks were toying fondly with each other.

He further relates a curious circumstance of finding a humming-bird in the upper part of a barn with its bill stuck fast in a crack of one of the large timbers, dead, of course, with wings extended, and as dry as a chip. The bird seems to have died as it had lived, on the wing, and its last act was indeed a ghastly parody of its living career. Fancy this nimble, flashing sprite, whose life was passed probing the honeyed depths of flowers, at last thrusting its bill into a crack in a dry timber in a hay-loft, and, with spread wings, ending its existence.

When the air is damp and heavy, swallows frequently hawk for insects about cattle and moving herds in the field. My farmer describes how they attended him one foggy day, as he was mowing in the meadow with a mowing-machine. It had been foggy for two days, and the swallows were very hungry, and the insects stupid and inert. When the sound of his machine was heard, the swallows appeared and attended him like a brood of hungry chickens. He says there was a continued rush of purple wings over the "cut-bar," and just where it was causing the grass to tremble and fall. Without his assistance the swallows would doubtless have gone hungry yet another day.

Of the hen-hawk, he has observed that both male and female take part in incubation. "I was rather surprised," he says, "on one occasion, to see how quickly they change places on the nest. The nest was in a tall beech, and the leaves were not yet fully cut. I could see the head and neck of the hawk over the edge of the nest, when I saw the other hawk coming down through the air at full speed. I expected he would alight near by, but instead of that he struck directly upon the nest, his mate getting out of the way barely in time to avoid being hit; it seemed almost as if he had knocked her off the nest. I hardly see how they can make such a rush on the nest without danger to the eggs."

The king-bird will worry the hawk as a whippet dog will worry a bear. It is by his persistence and audacity, not by any injury he is capable of dealing his great antagonist. The king-bird seldom more than dogs the hawk, keeping above and between his wings, and making a great ado; but my correspondent says he once "saw a king-bird riding on a hawk's back. The hawk flew as fast as possible, and the king-bird sat upon his shoulders in triumph until they had passed out of sight," — tweaking his feathers, no doubt, and threatening to scalp him the next moment.

That near relative of the king-bird, the great crested fly-catcher, has one well known peculiarity: he appears never to consider his nest finished until it contains a cast-off snake-skin. My alert correspondent one day saw him eagerly catch up an onion skin and make off with it, either deceived by it or else thinking it a good substitute for the coveted material.

One day in May, walking in the woods, I came upon the nest of a whippoorwill, or rather its eggs,

for it builds no nest,—two elliptical whitish spotted eggs lying upon the dry leaves. My foot was within a yard of the mother-bird before she flew. I wondered what a sharp eye would detect curious or characteristic in the ways of the bird, so I came to the place many times and had a look. It was always a task to separate the bird from her surroundings, though I stood within a few feet of her, and knew exactly where to look. One had to bear on with his eye, as it were, and refuse to be baffled. The sticks and leaves, and bits of black or dark-brown bark, were all exactly copied in the bird's plumage. And then she did sit so close, and simulate so well a shapeless decaying piece of wood or bark! Twice I brought a companion, and guiding his eye to the spot, noted how difficult it was for him to make out there, in full view upon the dry leaves, any semblance to a bird. When the bird returned after being disturbed, she would alight within a few inches of her eggs, and then, after a moment's pause, hobble awkwardly upon them.

After the young had appeared, all the wit of the bird came into play. I was on hand the next day, I think. The mother-bird sprang up when I was within a pace of her, and in doing so fanned the leaves with her wings till they sprang up too; as the leaves started the young started, and, being of the same color, to tell which was the leaf and which the bird was a trying task to any eye. I came the next day, when the same tactics were repeated. Once a leaf fell upon one of the young birds and nearly hid it. The young are covered with a reddish down, like a young partridge, and soon follow their mother about. When disturbed, they gave but one leap,

then settled down, perfectly motionless and stupid, with eyes closed. The parent bird, on these occasions, made frantic efforts to decoy me away from her young. She would fly a few paces and fall upon her breast, and a spasm, like that of death, would run through her tremulous outstretched wings and prostrate body. She kept a sharp eye out the meanwhile to see if the ruse took, and if it did not, she was quickly cured, and moving about to some other point, tried to draw my attention as before. When followed she always alighted upon the ground, dropping down in a sudden peculiar way. The second or third day both old and young had disappeared.

The whippoorwill walks as awkwardly as a swallow, which is as awkward as a man in a bag, and yet she manages to lead her young about the woods. The latter, I think, move by leaps and sudden spurts, their protective coloring shielding them most effectively. Wilson once came upon the mother-bird and her brood in the woods, and, though they were at his very feet, was so baffled by the concealment of the young that he was about to give up the search, much disappointed, when he perceived something "like a slight moldiness among the withered leaves, and, on stooping down, discovered it to be a young whippoorwill, seemingly asleep." Wilson's description of the young is very accurate, as its downy covering does look precisely like a "slight moldiness." Returning a few moments afterward to the spot to get a pencil he had forgotten, he could find neither old nor young.

It takes an eye to see a partridge in the woods, motionless upon the leaves; this sense needs to be as sharp as that of smell in hounds and pointers; and yet I know an unkempt youth that seldom fails to

see the bird and shoot it before it takes wing. I think he sees it as soon as it sees him, and before it suspects itself seen. What a training to the eye is hunting! To pick out the game from its surroundings, the grouse from the leaves, the gray squirrel from the mossy oak limb it hugs so closely, the red fox from the ruddy or brown or gray field, the rabbit from the stubble, or the white hare from the snow, requires the best powers of this sense. A woodchuck, motionless in the fields or upon a rock, looks very much like a large stone or boulder, yet a keen eye knows the difference at a glance, a quarter of a mile away.

A man has a sharper eye than a dog, or a fox, or than any of the wild creatures, but not so sharp an ear or nose. But in the birds he finds his match. How quickly the old turkey discovers the hawk, a mere speck against the sky, and how quickly the hawk discovers you if you happen to be secreted in the bushes, or behind the fence near which he alights! One advantage the bird surely has, and that is, owing to the form, structure, and position of the eye, it has a much larger field of vision — indeed, can probably see in nearly every direction at the same instant, behind as well as before. Man's field of vision embraces less than half a circle horizontally, and still less vertically; his brow and brain prevent him from seeing within many degrees of the zenith without a movement of the head; the bird, on the other hand, takes in nearly the whole sphere at a glance.

I find I see, almost without effort, nearly every bird within sight in the field or wood I pass through (a flit of the wing, a flirt of the tail are enough, though the flickering leaves do all conspire to hide them), and that with like ease the birds see me, though, un-

questionably, the chances are immensely in their favor. The eye sees what it has the means of seeing, truly. You must have the bird in your heart before you can find it in the bush. The eye must have purpose and aim. No one ever yet found the walking fern who did not have the walking fern in his mind. A person whose eye is full of Indian relics picks them up in every field he walks through.

One season I was interested in the tree-frogs; especially the tiny piper that one hears about the woods and brushy fields — the hyla of the swamps become a denizen of the trees; I had never seen him in this new rôle. But this season, having hylas in mind, or rather being ripe for them, I several times came across them. One Sunday, walking amid some bushes, I captured two. They leaped before me as doubtless they had done many times before; but though I was not looking for or thinking of them, yet they were quickly recognized, because the eye had been commissioned to find them. On another occasion, not long afterward, I was hurriedly loading my gun in the October woods in hopes of overtaking a gray squirrel that was fast-escaping through the tree-tops, when one of these lilliput frogs, the color of the fast-yellowing leaves, leaped near me. I saw him only out of the corner of my eye and yet bagged him, because I had already made him my own.

Nevertheless, the habit of observation is the habit of clear and decisive gazing. Not by a first casual glance, but by a steady deliberate aim of the eye are the rare and characteristic things discovered. You must look intently and hold your eye firmly to the spot, to see more than do the rank and file of mankind. The sharp-shooter picks out his man and knows

him with fatal certainty from a stump, or a rock, or a cap on a pole. The phrenologists do well to locate, not only form, color, and weight, in the region of the eye, but also a faculty which they call individuality — that which separates, discriminates, and sees in every object its essential character. This is just as necessary to the naturalist as to the artist or the poet. The sharp eye notes specific points and differences, — it seizes upon and preserves the individuality of the thing.

Persons frequently describe to me some bird they have seen or heard and ask me to name it, but in most cases the bird might be any one of a dozen, or else it is totally unlike any bird found on this continent. They have either seen falsely or else vaguely. Not so the farm youth who wrote me one winter day that he had seen a single pair of strange birds, which he describes as follows: "They were about the size of the 'chippie,' the tops of their heads were red, and the breast of the male was of the same color, while that of the female was much lighter; their rumps were also faintly tinged with red. If I have described them so that you would know them, please write me their names." There can be little doubt but the young observer had seen a pair of red-polls, — a bird related to the goldfinch, and that occasionally comes down to us in the winter from the far north. Another time, the same youth wrote that he had seen a strange bird, the color of a sparrow, that alighted on fences and buildings as well as upon the ground, and that walked. This last fact showed the youth's discriminating eye and settled the case. I knew it to be a species of the lark, and from the size, color, season, etc., the tit-lark. But how many persons would have observed that the bird walked instead of hopped?

Some friends of mine who lived in the country tried to describe to me a bird that built a nest in a tree within a few feet of the house. As it was a brown bird, I should have taken it for a wood-thrush, had not the nest been described as so thin and loose that from beneath the eggs could be distinctly seen. The most pronounced feature in the description was the barred appearance of the under side of the bird's tail. I was quite at sea, until one day, when we were driving out, a cuckoo flew across the road in front of us, when my friends exclaimed, "There is our bird!" I had never known a cuckoo to build near a house, and I had never noted the appearance the tail presents when viewed from beneath; but if the bird had been described in its most obvious features, as slender, with a long tail, cinnamon brown above and white beneath, with a curved bill, any one who knew the bird would have recognized the portrait.

We think we have looked at a thing sharply until we are asked for its specific features. I thought I knew exactly the form of the leaf of the tulip-tree, until one day a lady asked me to draw the outline of one. A good observer is quick to take a hint and to follow it up. Most of the facts of nature, especially in the life of the birds and animals, are well screened. We do not see the play because we do not look intently enough. The other day I was sitting with a friend upon a high rock in the woods, near a small stream, when we saw a water-snake swimming across a pool toward the opposite bank. Any eye would have noted it, perhaps nothing more. A little closer and sharper gaze revealed the fact that the snake bore something in its mouth, which, as we went down to investigate, proved to be a small cat-fish, three or

four inches long. The snake had captured it in the pool, and, like any other fisherman, wanted to get its prey to dry land, although itself lived mostly in the water. Here, we said, is being enacted a little tragedy, that would have escaped any but sharp eyes. The snake, which was itself small, had the fish by the throat, the hold of vantage among all creatures, and clung to it with great tenacity. The snake knew that its best tactics was to get upon dry land as soon as possible. It could not swallow its victim alive, and it could not strangle it in the water. For a while it tried to kill its game by holding it up out of the water, but the fish grew heavy, and every few moments its struggles brought down the snake's head. This would not do. Compressing the fish's throat would not shut off its breath under such circumstances, so the wily serpent tried to get ashore with it, and after several attempts succeeded in effecting a landing on a flat rock. But the fish died hard. Catfish do not give up the ghost in a hurry. Its throat was becoming congested, but the snake's distended jaws must have ached. It was like a petrified gape. Then the spectators became very curious and close in their scrutiny, and the snake determined to withdraw from the public gaze and finish the business in hand to its own notions. But, when gently but firmly remonstrated with by my friend with his walking-stick, it dropped the fish and retreated in high dudgeon beneath a stone in the bed of the creek. The fish, with a swollen and angry throat, went its way also.

Birds, I say, have wonderfully keen eyes. Throw a fresh bone or a piece of meat upon the snow in winter, and see how soon the crows will discover it and be on hand. If it be near the house or barn, the

crow that first discovers it will alight near it, to make sure he is not deceived ; then he will go away, and soon return with a companion. The two alight a few yards from the bone, and after some delay, during which the vicinity is sharply scrutinized, one of the crows advances boldly to within a few feet of the coveted prize. Here he pauses, and if no trick is discovered, and the meat be indeed meat, he seizes it and makes off.

One midwinter I cleared away the snow under an apple-tree near the house and scattered some corn there. I had not seen a blue-jay for weeks, yet that very day one found my corn, and after that several came daily and partook of it, holding the kernels under their feet upon the limbs of the trees and pecking them vigorously.

Of course the woodpecker and his kind have sharp eyes ; still I was surprised to see how quickly Downy found out some bones that were placed in a convenient place under the shed to be pounded up for the hens. In going out to the barn I often disturbed him making a meal off the bite of meat that still adhered to them.

“Look intently enough at anything,” said a poet to me one day, “and you will see something that would otherwise escape you.” I thought of the remark as I sat on a stump in an opening of the woods one spring day. I saw a small hawk approaching ; he flew to a tall tulip-tree and alighted on a large limb near the top. He eyed me and I eyed him. Then the bird disclosed a trait that was new to me : he hopped along the limb to a small cavity near the trunk, when he thrust in his head and pulled out some small object and fell to eating it. After he had partaken of it for some minutes he put the remainder back in his larder

and flew away. I had seen something like feathers eddying slowly down as the hawk ate, and on approaching the spot found the feathers of a sparrow here and there clinging to the bushes beneath the tree. The hawk then — commonly called the chicken hawk — is as provident as a mouse or a squirrel, and lays by a store against a time of need, but I should not have discovered the fact had I not held my eye on him.

An observer of the birds is attracted by any unusual sound or commotion among them. In May or June, when other birds are most vocal, the jay is a silent bird ; he goes sneaking about the orchards and the groves as silent as a pickpocket ; he is robbing bird's-nests and he is very anxious that nothing should be said about it ; but in the fall none so quick and loud to cry "Thief, thief !" as he. One December morning a troop of jays discovered a little screech-owl secreted in the hollow trunk of an old apple-tree near my house. How they found the owl out is a mystery, since it never ventures forth in the light of day ; but they did, and proclaimed the fact with great emphasis. I suspect the bluebirds first told them, for these birds are constantly peeping into holes and crannies, both spring and fall. Some unsuspecting bird had probably entered the cavity prospecting for a place for next year's nest, or else looking out a likely place to pass a cold night, and then had rushed out with important news. A boy who should unwittingly venture into a bear's den when Bruin was at home could not be more astonished and alarmed than a bluebird would be on finding itself in the cavity of a decayed tree with an owl. At any rate the bluebirds joined the jays in calling the attention of all whom it might concern to

the fact that a culprit of some sort was hiding from the light of day in the old apple-tree. I heard the notes of warning and alarm and approached to within eye-shot. The bluebirds were cautious and hovered about uttering their peculiar twittering calls; but the jays were bolder and took turns looking in at the cavity, and deriding the poor, shrinking owl. A jay would alight in the entrance of the hole and flirt and peer and attitudinize, and then fly away crying "Thief, thief, thief!" at the top of his voice.

I climbed up and peered into the opening, and could just descry the owl clinging to the inside of the tree. I reached in and took him out, giving little heed to the threatening snapping of his beak. He was as red as a fox and as yellow-eyed as a cat. He made no effort to escape, but planted his claws in my forefinger and clung there with a grip that soon grew uncomfortable. I placed him in the loft of an out-house in hopes of getting better acquainted with him. By day he was a very willing prisoner, scarcely moving at all, even when approached and touched with the hand, but looking out upon the world with half-closed, sleepy eyes. But at night what a change; how alert, how wild, how active! He was like another bird; he darted about with wide, fearful eyes, and regarded me like a cornered cat. I opened the window, and swiftly, but as silent as a shadow, he glided out into the congenial darkness, and perhaps, ere this, has revenged himself upon the sleeping jay or bluebird that first betrayed his hiding-place.

THE APPLE.

Lo! sweetened with the summer light,
The full-juiced apple, waxing over-mellow,
Drops in a silent autumn night.— TENNYSON.

NOT a little of the sunshine of our northern winters is surely wrapped up in the apple. How could we winter over without it! How is life sweetened by its mild acids! A cellar well filled with apples is more valuable than a chamber filled with flax and wool. So much sound ruddy life to draw upon, to strike one's roots down into, as it were.

Especially to those whose soil of life is inclined to be a little clayey and heavy, is the apple a winter necessity. It is the natural antidote of most of the ills the flesh is heir to. Full of vegetable acids and aromatics, qualities which act as refrigerants and antiseptics, what an enemy it is to jaundice, indigestion, torpidity of liver, etc. It is a gentle spur and tonic to the whole biliary system. Then I have read that it has been found by analysis to contain more phosphorus than any other vegetable. This makes it the proper food of the scholar and the sedentary man; it feeds his brain and it stimulates his liver. Nor is this all. Besides its hygienic properties, the apple is full of sugar and mucilage, which make it highly nutritious. It is said, “The operators of Cornwall, England, consider ripe apples nearly as nourishing as bread, and far more so than potatoes. In the year 1801 — which was a year of much scarcity — apples,

D. H. HILL LIBRARY

North Carolina State College

instead of being converted into cider, were sold to the poor, and the laborers asserted that they could ‘stand their work’ on baked apples without meat; whereas a potato diet required either meat or some other substantial nutriment. The French and Germans use apples extensively, so do the inhabitants of all European nations. The laborers depend upon them as an article of food, and frequently make a dinner of sliced apples and bread.”

Yet the English apple is a tame and insipid affair, compared with the intense, sun-colored and sun-steeped fruit our orchards yield. The English have no sweet apple, I am told, the saccharine element apparently being less abundant in vegetable nature in that sour and chilly climate than in our own. It is well known that the European maple yields no sugar, while both our birch and hickory have sweet in their veins. Perhaps this fact accounts for our excessive love of sweets, which may be said to be a national trait.

The Russian apple has a lovely complexion, smooth and transparent, but the Cossack is not yet all eliminated from it. The only one I have seen — the Duchess of Oldenburg — is as beautiful as a Tartar princess, with a distracting odor, but it is the least bit puckery to the taste.

The best thing I know about Chili is not its guano beds, but this fact which I learn from Darwin’s “Voyage,” namely, that the apple thrives well there. Darwin saw a town there so completely buried in a wood of apple-trees, that its streets were merely paths in an orchard. The tree indeed thrives so well, that large branches cut off in the spring and planted two or three feet deep in the ground send out roots and

develop into fine full-bearing trees by the third year. The people know the value of the apple too. They make cider and wine of it and then from the refuse a white and finely flavored spirit; then by another process a sweet treacle is obtained called honey. The children and the pigs eat little or no other food. He does not add that the people are healthy and temperate, but I have no doubt they are. We knew the apple had many virtues, but these Chilians have really opened a deep beneath a deep. We had found out the cider and the spirits, but who guessed the wine and the honey, unless it were the bees? There is a variety in our orchards called the winesap, a doubly liquid name that suggests what might be done with this fruit.

The apple is the commonest and yet the most varied and beautiful of fruits. A dish of them is as becoming to the centre-table in winter as was the vase of flowers in the summer,—a bouquet of spitzbergs and greenings and northern spies. A rose when it blooms, the apple is a rose when it ripens. It pleases every sense to which it can be addressed, the touch, the smell, the sight, the taste; and when it falls in the still October days it pleases the ear. It is a call to a banquet, it is a signal that the feast is ready. The bough would fain hold it, but it can now assert its independence; it can now live a life of its own.

Daily the stem relaxes its hold, till finally it lets go completely, and down comes the painted sphere with a mellow thump to the earth, towards which it has been nodding so long. It bounds away to seek its bed, to hide under a leaf, or in a tuft of grass. It will now take time to meditate and ripen! What delicious thoughts it has there nestled with its fellows under

the fence, turning acid into sugar, and sugar into wine!

How pleasing to the touch! I love to stroke its polished rondere with my hand, to carry it in my pocket on my tramp over the winter hills, or through the early spring woods. You are company, you red-cheeked spitz, or you salmon-fleshed greening! I toy with you; press your face to mine, toss you in the air, roll you on the ground, see you shine out where you lie amid the moss and dry leaves and sticks. You are so alive! You glow like a ruddy flower. You look so animated I almost expect to see you move. I postpone the eating of you, you are so beautiful! How compact; how exquisitely tinted! Stained by the sun and varnished against the rains. An independent vegetable existence, alive and vascular as my own flesh; capable of being wounded, bleeding, wasting away, and almost of repairing damages!

How it resists the cold! holding out almost as long as the red cheeks of the boys do. A frost that destroys the potatoes and other roots only makes the apple more crisp and vigorous; it peeps out from the chance November snows unscathed. When I see the fruit-vender on the street corner stamping his feet and beating his hands to keep them warm, and his naked apples lying exposed to the blasts, I wonder if they do not ache too to clap their hands and enliven their circulation. But they can stand it nearly as long as the vender can.

Noble common fruit, best friend of man and most loved by him, following him like his dog or his cow, wherever he goes. His homestead is not planted till you are planted, your roots intertwine with his; thriving best where he thrives best, loving the limestone

and the frost, the plow and the pruning-knife, you are indeed suggestive of hardy, cheerful industry, and a healthy life in the open air. Temperate, chaste fruit! you mean neither luxury nor sloth, neither satiety nor indolence, neither enervating heats nor the Frigid Zones. Uncloying fruit, fruit whose best sauce is the open air, whose finest flavors only he whose taste is sharpened by brisk work or walking knows; winter fruit, when the fire of life burns brightest; fruit always a little hyperborean, leaning towards the cold; bracing, sub-acid, active fruit. I think you must come from the north, you are so frank and honest, so sturdy and appetizing. You are stocky and homely like the northern races. Your quality is Saxon. Surely the fiery and impetuous south is not akin to you. Not spices or olives or the sumptuous liquid fruits, but the grass, the snow, the grains, the coolness is akin to you. I think if I could subsist on you or the like of you, I should never have an intemperate or ignoble thought, never be feverish or despondent. So far as I could absorb or transmute your quality I should be cheerful, continent, equitable, sweet-blooded, long-lived, and should shed warmth and contentment around.

Is there any other fruit that has so much facial expression as the apple? What boy does not more than half believe they can see with that single eye of theirs? Do they not look and nod to him from the bough? The swaar has one look, the rambo another, the spy another. The youth recognizes the seek-no-further buried beneath a dozen other varieties, the moment he catches a glance of its eye, or the bonny-cheeked Newtown pippin, or the gentle but sharp-nosed gilliflower. He goes to the great bin in the cellar

and sinks his shafts here and there in the garnered wealth of the orchards, mining for his favorites, sometimes coming plump upon them, sometimes catching a glimpse of them to the right or left, or uncovering them as keystones in an arch made up of many varieties.

In the dark he can usually tell them by the sense of touch. There is not only the size and shape, but there is the texture and polish. Some apples are coarse-grained and some are fine; some are thin-skinned and some are thick. One variety is quick and vigorous beneath the touch; another gentle and yielding. The pinnoch has a thick skin with a spongy lining, a bruise in it becomes like a piece of cork. The tallow apple has an unctuous feel, as its name suggests. It sheds water like a duck. What apple is that with a fat curved stem that blends so prettily with its own flesh, — the wine-apple? Some varieties impress me as masculine, — weather-stained, freckled, lasting and rugged; others are indeed lady apples, fair, delicate, shining, mild-flavored, white-meated, like the egg-drop and the lady-finger. The practiced hand knows each kind by the touch.

Do you remember the apple hole in the garden or back of the house, Ben Bolt? In the fall after the bins in the cellar had been well stocked, we excavated a circular pit in the warm, mellow earth, and covering the bottom with clean rye straw, emptied in basketful after basketful of hardy choice varieties, till there was a tent-shaped mound several feet high of shining variegated fruit. Then wrapping it about with a thick layer of long rye straw, and tucking it up snug and warm, the mound was covered with a thin coating of earth, a flat stone on the top holding down the straw.

As winter set in, another coating of earth was put upon it, with perhaps an overcoat of coarse dry stable manure, and the precious pile was left in silence and darkness till spring. No marmot hibernating under ground in his nest of leaves and dry grass, more cosy and warm. No frost, no wet, but fragrant privacy and quiet. Then how the earth tempers and flavors the apples! It draws out all the acrid unripe qualities, and infuses into them a subtle refreshing taste of the soil. Some varieties perish; but the ranker, hardier kinds, like the northern spy, the greening, or the black apple, or the russet, or the pinnock, how they ripen and grow in grace, how the green becomes gold, and the bitter becomes sweet!

As the supply in the bins and barrels gets low and spring approaches, the buried treasures in the garden are remembered. With spade and axe we go out and penetrate through the snow and frozen earth till the inner dressing of straw is laid bare. It is not quite as clear and bright as when we placed it there last fall, but the fruit beneath, which the hand soon exposes, is just as bright and far more luscious. Then, as day after day you resort to the hole, and, removing the straw and earth from the opening, thrust your arm into the fragrant pit, you have a better chance than ever before to become acquainted with your favorites by the sense of touch. How you feel for them, reaching to the right and left! Now you have got a Tolman sweet; you imagine you can feel that single meridian line that divides it into two hemispheres. Now a greening fills your hand, you feel its fine quality beneath its rough coat. Now you have hooked a swaar, you recognize its full face; now a Vandevere or a King rolls down from the apex above,

and you bag it at once. When you were a school-boy you stowed these away in your pockets and ate them along the road and at recess, and again at noon-time ; and they, in a measure, corrected the effects of the cake and pie with which your indulgent mother filled your lunch-basket.

The boy is indeed the true apple-eater, and is not to be questioned how he came by the fruit with which his pockets are filled. It belongs to him . . . His own juicy flesh craves the juicy flesh of the apple. Sap draws sap. His fruit-eating has little reference to the state of his appetite. Whether he be full of meat or empty of meat he wants the apple just the same. Before meal or after meal it never comes amiss. The farm-boy munches apples all day long. He has nests of them in the hay-mow, mellowing, to which he makes frequent visits. Sometimes old Brindle, having access through the open door, smells them out and makes short work of them.

In some countries the custom remains of placing a rosy apple in the hand of the dead that they may find it when they enter paradise. In northern mythology the giants eat apples to keep off old age.

The apple is indeed the fruit of youth. As we grow old we crave apples less. It is an ominous sign. When you are ashamed to be seen eating them on the street ; when you can carry them in your pocket and your hand not constantly find its way to them ; when your neighbor has apples and you have none, and you make no nocturnal visits to his orchard ; when your lunch-basket is without them, and you can pass a winter's night by the fireside with no thought of the fruit at your elbow, then be assured you are no longer a boy, either in heart or years.

The genuine apple-eater comforts himself with an apple in their season as others with a pipe or cigar. When he has nothing else to do, or is bored, he eats an apple. While he is waiting for the train he eats an apple, sometimes several of them. When he takes a walk he arms himself with apples. His traveling bag is full of apples. He offers an apple to his companion, and takes one himself. They are his chief solace when on the road. He sows their seed all along the route. He tosses the core from the car-window and from the top of the stage-coach. He would, in time, make the land one vast orchard. He dispenses with a knife. He prefers that his teeth shall have the first taste. Then he knows the best flavor is immediately beneath the skin, and that in a pared apple this is lost. If you will stew the apple, he says, instead of baking it, by all means leave the skin on. It improves the color and vastly heightens the flavor of the dish.

The apple is a masculine fruit; hence women are poor apple-eaters. It belongs to the open air, and requires an open-air taste and relish.

I instantly sympathized with that clergyman I read of, who on pulling out his pocket-handkerchief in the midst of his discourse, pulled out two bouncing apples with it that went rolling across the pulpit floor and down the pulpit stairs. These apples were, no doubt, to be eaten after the sermon on his way home, or to his next appointment. They would take the taste of it out of his mouth. Then, would a minister be apt to grow tiresome with two big apples in his coat-tail pockets? Would he not naturally hasten along to "lastly," and the big apples? If they were the dominie apples, and it was April or May, he certainly would.

How the early settlers prized the apple! When their trees broke down or were split asunder by the storms, the neighbors turned out, the divided tree was put together again and fastened with iron bolts. In some of the oldest orchards one may still occasionally see a large dilapidated tree with the rusty iron bolt yet visible. Poor, sour fruit, too, but sweet in those early pioneer days. My grandfather, who was one of these heroes of the stump, used every fall to make a journey of forty miles for a few apples, which he brought home in a bag on horseback. He frequently started from home by two or three o'clock in the morning, and at one time both he and his horse were much frightened by the screaming of panthers in a narrow pass in the mountains through which the road led.

Emerson, I believe, has spoken of the apple as the social fruit of New England. Indeed, what a promoter or abettor of social intercourse among our rural population the apple has been, the company growing more merry and unrestrained as soon as the basket of apples was passed round! When the cider followed, the introduction and good understanding were complete. Then those rural gatherings that enlivened the autumn in the country, known as "apple cuts," now, alas! nearly obsolete, where so many things were cut and dried besides apples! The larger and more loaded the orchard, the more frequently the invitations went round and the higher the social and convivial spirit ran. Ours is eminently a country of the orchard. Horace Greeley said he had seen no land in which the orchard formed such a prominent feature in the rural and agricultural districts. Nearly every farmhouse in the Eastern and Northern States has its

setting or its background of apple-trees, which generally date back to the first settlement of the farm. Indeed, the orchard, more than almost any other thing, tends to soften and humanize the country, and to give the place of which it is an adjunct, a settled, domestic look. The apple-tree takes the rawness and wildness off any scene. On the top of a mountain, or in remote pastures, it sheds the sentiment of home. It never loses its domestic air, or lapses into a wild state. And in planting a homestead, or in choosing a building site for the new house, what a help it is to have a few old, maternal apple-trees near by; regular old grandmothers, who have seen trouble, who have been sad and glad through so many winters and summers, who have blossomed till the air about them is sweeter than elsewhere, and borne fruit till the grass beneath them has become thick and soft from human contact, and who have nourished robins and finches in their branches till they have a tender, brooding look. The ground, the turf, the atmosphere of an old orchard, seem several stages nearer to man than that of the adjoining field, as if the trees had given back to the soil more than they had taken from it; as if they had tempered the elements and attracted all the genial and beneficent influences in the landscape around.

An apple orchard is sure to bear you several crops beside the apple. There is the crop of sweet and tender reminiscences dating from childhood and spanning the seasons from May to October, and making the orchard a sort of outlying part of the household. You have played there as a child, mused there as a youth or lover, strolled there as a thoughtful, sad-eyed man. Your father, perhaps, planted the trees, or reared them

from the seed, and you yourself have pruned and grafted them, and worked among them, till every separate tree has a peculiar history and meaning in your mind. Then there is the never-failing crop of birds — robins, goldfinches, king-birds, cedar-birds, hair-birds, orioles, starlings — all nesting and breeding in its branches, and fitly described by Wilson Flagg as “Birds of the Garden and Orchard.” Whether the pippin and sweetbough bear or not, the “punctual birds” can always be depended on. Indeed, there are few better places to study ornithology than in the orchard. Besides its regular occupants, many of the birds of the deeper forest find occasion to visit it during the season. The cuckoo comes for the tent-caterpillar, the jay for frozen apples, the ruffed grouse for buds, the crow foraging for birds’ eggs, the woodpecker and chickadees for their food, and the high-hole for ants. The red-bird comes too, if only to see what a friendly covert its branches form; and the wood-thrush now and then comes out of the grove near by, and nests alongside of its cousin, the robin. The smaller hawks know that this is a most likely spot for their prey; and in spring the shy northern warblers may be studied as they pause to feed on the fine insects amid its branches. The mice love to dwell here also, and hither comes from the near woods the squirrel and the rabbit. The latter will put his head through the boy’s slipper-noose any time for a taste of the sweet apple, and the red squirrel and chipmunk esteem its seeds a great rarity.

All the domestic animals love the apple, but none so much so as the cow. The taste of it wakes her up as few other things do, and bars and fences must be well looked after. No need to assort them or pick

out the ripe ones for her. An apple is an apple, and there is no best about it. I heard of a quick-witted old cow that learned to shake them down from the tree. While rubbing herself she had observed that an apple sometimes fell. This stimulated her to rub a little harder, when more apples fell. She then took the hint and rubbed her shoulder with such vigor that the farmer had to check her and keep an eye on her to save his fruit.

But the cow is the friend of the apple. How many trees she has planted about the farm, in the edge of the woods, and in remote fields and pastures. The wild apples, celebrated by Thoreau, are mostly of her planting. She browses them down to be sure, but they are hers, and why should she not?

What an individuality the apple-tree has, each variety being nearly as marked by its form as by its fruit. What a vigorous grower, for instance, is the Ribston pippin, an English apple. Wide branching like the oak, and its large ridgy fruit, in late fall or early winter, is one of my favorites. Or the thick and more pendent top of the belleflower, with its equally rich, sprightly *uncloying* fruit.

Sweet apples are perhaps the most nutritious, and when baked are a feast in themselves. With a tree of the Jersey sweet or of Tolman's sweeting in bearing, no man's table need be devoid of luxuries and one of the most wholesome of all deserts. Or the red astrachan, an August apple, what a gap may be filled in the culinary department of a household at this season, by a single tree of this fruit! And what a feast is its shining crimson coat to the eye before its snow-white flesh has reached the tongue. But the apple of apples for the household is the spitzenberg.

In this casket Pomona has put her highest flavors. It can stand the ordeal of cooking and still remain a spitz. I recently saw a barrel of these apples from the orchard of a fruit-grower in the northern part of New York, who has devoted especial attention to this variety. They were perfect gems. Not large, that had not been the aim, but small, fair, uniform, and red to the core. How intense, how spicy and aromatic!

But all the excellences of the apple are not confined to the cultivated fruit. Occasionally a seedling springs up about the farm that produces fruit of rare beauty and worth. In sections peculiarly adapted to the apple, like a certain belt along the Hudson River, I have noticed that most of the wild unbidden trees bear good, edible fruit. In cold and ungenial districts, the seedlings are mostly sour and crabbed, but in more favorable soils they are oftener mild and sweet. I know wild apples that ripen in August, and that do not need, if it could be had, Thoreau's sauce of sharp November air to be eaten with. At the foot of a hill near me and striking its roots deep in the shale, is a giant specimen of native tree that bears an apple that has about the clearest, waxiest, most transparent complexion I ever saw. It is good size, and the color of a tea-rose. Its quality is best appreciated in the kitchen. I know another seedling of excellent quality and so remarkable for its firmness and density, that it is known on the farm where it grows as the "heavy apple."

I have alluded to Thoreau, to whom all lovers of the apple and its tree are under obligation. His chapter on Wild Apples is a most delicious piece of writing. It has a "tang and smack" like the fruit it celebrates, and is dashed and streaked with color in

the same manner. It has the hue and perfume of the crab, and the richness and raciness of the pippin. But Thoreau loved other apples than the wild sorts and was obliged to confess that his favorites could not be eaten in-doors. Late in November he found a blue-pearmain tree growing within the edge of a swamp, almost as good as wild. "You would not suppose," he says, "that there was any fruit left there on the first survey, but you must look according to system. Those which lie exposed are quite brown and rotten now, or perchance a few still show one blooming cheek here and there amid the wet leaves. Nevertheless, with experienced eyes I explore amid the bare alders, and the huckleberry bushes, and the withered sedge, and in the crevices of the rocks, which are full of leaves, and pry under the fallen and decayed ferns which, with apple and alder leaves, thickly strew the ground. For I know that they lie concealed, fallen into hollows long since, and covered up by the leaves of the tree itself — a proper kind of packing. From these lurking places, everywhere within the circumference of the tree, I draw forth the fruit all wet and glossy, maybe nibbled by rabbits and hollowed out by crickets, and perhaps a leaf or two cemented to it (as Curzon an old manuscript from a monastery's mouldy cellar), but still with a rich bloom on it, and at least as ripe and well kept, if no better than those in barrels, more crisp and lively than they. If these resources fail to yield anything, I have learned to look between the leaves of the suckers which spring thickly from some horizontal limb, for now and then one lodges there, or in the very midst of an alder-clump, where they are covered by leaves, safe from cows which may have smelled them out. If I am sharp-set, for I

do not refuse the blue-pearmain, I fill my pockets on each side ; and as I retrace my steps, in the frosty eve, being perhaps four or five miles from home, I eat one first from this side, and then from that, to keep my balance."

A TASTE OF MAINE BIRCH.

THE traveler and camper-out in Maine, unless he penetrates its more northern portions, has less reason to remember it as a pine-tree State than a birch-tree State. The white-pine forests have melted away like snow in the spring and gone down stream, leaving only patches here and there in the more remote and inaccessible parts. The portion of the State I saw — the valley of the Kennebec and the woods about Moxie Lake — had been shorn of its pine timber more than forty years before, and is now covered with a thick growth of spruce and cedar and various deciduous trees. But the birch abounds. Indeed, when the pine goes out the birch comes in ; the race of men succeeds the race of giants. This tree has great stay-at-home virtues. Let the sombre, aspiring, mysterious pine go ; the birch has humble every-day uses. In Maine, the paper or canoe birch is turned to more account than any other tree. I read in Gibbon that the natives of ancient Assyria used to celebrate in verse or prose the three hundred and sixty uses to which the various parts and products of the palm-tree were applied. The Maine birch is turned to so many accounts that it may well be called the palm of this region. Uncle Nathan, our guide, said it was made especially for the camper-out ; yes, and for the wood-man and frontiersman generally. It is a magazine, a furnishing store set up in the wilderness, whose goods

are free to every comer. The whole equipment of the camp lies folded in it, and comes forth at the beck of the woodman's axe; tent, waterproof roof, boat, camp utensils, buckets, cups, plates, spoons, napkins, table-cloths, paper for letters or your journal, torches, candles, kindling-wood, and fuel. The canoe-birch yields you its vestments with the utmost liberality. Ask for its coat, and it gives you its waistcoat also. Its bark seems wrapped about it layer upon layer, and comes off with great ease. We saw many rude structures and cabins shingled and sided with it, and haystacks capped with it. Near a maple-sugar camp there was a large pile of birch-bark sap-buckets, — each bucket made of a piece of bark about a yard square, folded up as the tinman folds up a sheet of tin to make a square vessel, the corners bent around against the sides and held by a wooden pin. When, one day, we were overtaken by a shower in traveling through the woods, our guide quickly stripped large sheets of the bark from a near tree, and we had each a perfect umbrella as by magic. When the rain was over, and we moved on, I wrapped mine about me like a large leather apron, and it shielded my clothes from the wet bushes. When we came to a spring, Uncle Nathan would have a birch-bark cup ready before any of us could get a tin one out of his knapsack, and I think water never tasted so sweet as from one of these bark cups. It is exactly the thing. It just fits the mouth, and it seems to give new virtues to the water. It makes me thirsty now when I think of it. In our camp at Moxie we made a large birch-bark box to keep the butter in; and the butter in this box, covered with some leafy boughs, I think improved in flavor day by day. Maine butter needs something to mollify

and sweeten it a little, and I think birch bark will do it. In camp Uncle Nathan often drank his tea and coffee from a bark cup ; the china closet in the birch-tree was always handy, and our vulgar tin ware was generally a good deal mixed, and the kitchen-maid not at all particular about dish-washing. We all tried the oatmeal with the maple syrup in one of these dishes, and the stewed mountain cranberries, using a birch-bark spoon, and never found service better. Uncle Nathan declared he could boil potatoes in a bark kettle, and I did not doubt him. Instead of sending our soiled napkins and table-spreads to the wash, we rolled them up into candles and torches, and drew daily upon our stores in the forest for new ones.

But the great triumph of the birch is of course the bark canoe. When Uncle Nathan took us out under his little wood-shed, and showed us, or rather modestly permitted us to see, his nearly finished canoe, it was like a first glimpse of some new and unknown genius of the woods or streams. It sat there on the chips and shavings and fragments of bark like some shy, delicate creature just emerged from its hiding-place, or like some wild flower just opened. It was the first boat of the kind I had ever seen, and it filled my eye completely. What woodcraft it indicated, and what a wild free life, sylvan life, it promised ! It had such a fresh, aboriginal look as I had never before seen in any kind of handiwork. Its clear yellow-red color would have become the cheek of an Indian maiden. Then its supple curves and swells, its sinewy stays and thwarts, its bow-like contour, its tomahawk stem and stern rising quickly and sharply from its frame, were all vividly suggestive of the race from which it came. An old Indian had taught Uncle Nathan the

art, and the soul of the ideal red man looked out of the boat before us. Uncle Nathan had spent two days ranging the mountains looking for a suitable tree, and had worked nearly a week on the craft. It was twelve feet long, and would seat and carry five men nicely. Three trees contribute to the making of a canoe besides the birch, namely, the white cedar for ribs and lining, the spruce for roots and fibres to sew its joints and bind its frame, and the pine for pitch or rosin to stop its seams and cracks. It is hand-made and home-made, or rather wood-made, in a sense that no other craft is, except a dug-out, and it suggests a taste and a refinement that few products of civilization realize. The design of a savage, it yet looks like the thought of a poet, and its grace and fitness haunt the imagination. I suppose its production was the inevitable result of the Indian's wants and surroundings, but that does not detract from its beauty. It is, indeed, one of the fairest flowers the thorny plant of necessity ever bore. Our canoe, as I have intimated, was not yet finished when we first saw it, nor yet when we took it up, with its architect, upon our metaphorical backs and bore it to the woods. It lacked part of its cedar lining and the rosin upon its joints, and these were added after we reached our destination.

Though we were not indebted to the birch-tree for our guide, Uncle Nathan, as he was known in all the country, yet he matched well these woodsy products and conveniences. The birch-tree had given him a large part of his tuition, and kneeling in his canoe and making it shoot noiselessly over the water with that subtle yet indescribably expressive and athletic play of the muscles of the back and shoulders, the boat and the man seemed born of the same spirit.

He had been a hunter and trapper for over forty years; he had grown gray in the woods, had ripened and matured there, and everything about him was as if the spirit of the woods had had the ordering of it; his whole make-up was in a minor and subdued key, like the moss and the lichens, or like the protective coloring of the game,—everything but his quick sense and penetrative glance. He was as gentle and modest as a girl; his sensibilities were like plants that grow in the shade. The woods and the solitudes had touched him with their own softening and refining influence; had indeed shed upon his soil of life a rich deep leaf mould that was delightful, and that nursed, half concealed, the tenderest and wildest growths. There was grit enough back of and beneath it all, but he presented none of the rough and repelling traits of character of the conventional backwoodsman. In the spring he was a driver of logs on the Kennebec, usually having charge of a large gang of men; in the winter he was a solitary trapper and hunter in the forests.

Our first glimpse of Maine waters was Pleasant Pond, which we found by following a white, rapid, musical stream from the Kennebec three miles back into the mountains. Maine waters are for the most part dark-complexioned, Indian-colored streams, but Pleasant Pond is a pale-face among them both in name and nature. It is the only strictly silver lake I ever saw. Its waters seem almost artificially white and brilliant, though of remarkable transparency. I think I detected minute shining motes held in suspension in it. As for the trout they are veritable bars of silver until you have cut their flesh, when they are the reddest of gold. They have no crimson or other

spots, and the straight lateral line is but a faint pencil mark. They appeared to be a species of lake trout peculiar to these waters, uniformly from ten to twelve inches in length. And these beautiful fish, at the time of our visit (last of August) at least, were to be taken only in deep water upon a hook baited with salt pork. And then you needed a letter of introduction to them. They were not to be tempted or cajoled by strangers. We did not succeed in raising a fish, although instructed how it was to be done, until one of the natives, a young and obliging farmer living hard by, came and lent his countenance to the enterprise. I sat in one end of the boat and he in the other; my pork was the same as his, and I manœuvred it as directed, and yet those fish knew his hook from mine in sixty feet of water, and preferred it four times in five. Evidently they did not bite because they were hungry, but solely for old acquaintance' sake.

Pleasant Pond is an irregular sheet of water, two miles or more in its greatest diameter, with high, rugged mountains rising up from its western shore, and low rolling hills sweeping back from its eastern and northern, covered by a few sterile farms. I was never tired, when the wind was still, of floating along its margin and gazing down into its marvelously translucent depths. The bowlders and fragments of rocks were seen, at a depth of twenty-five or thirty feet, strewing its floor, and apparently as free from any covering of sediment as when they were dropped there by the old glaciers æons ago. Our camp was amid a dense grove of second growth of white pine on the eastern shore, where, for one, I found a most admirable cradle in a little depression, outside of the tent, carpeted with pine needles, in which to pass the night.

The camper-out is always in luck if he can find, sheltered by the trees, a soft hole in the ground, even if he has a stone for a pillow. The earth must open its arms a little for us even in life, if we are to sleep well upon its bosom. I have often heard my grandfather, who was a soldier of the Revolution, tell with great gusto how he once bivouacked in a little hollow made by the overturning of a tree, and slept so soundly that he did not wake up till his cradle was half full of water from a passing shower.

What bird or other creature might represent the divinity of Pleasant Pond I do not know, but its demon, as of most northern inland waters, is the loon; and a very good demon he is too, suggesting something not so much malevolent, as arch, sardonic, ubiquitous, circumventing, with just a tinge of something inhuman and uncanny. His fiery red eyes gleaming forth from that jet-black head are full of meaning. Then his strange horse laughter by day and his weird, doleful cry at night, like that of a lost and wandering spirit, recall no other bird or beast. He suggests something almost supernatural in his alertness and amazing quickness, cheating the shot and the bullet of the sportsman out of their aim. I know of but one other bird so quick, and that is the humming-bird, which I have never been able to kill with a gun. The loon laughs the shot-gun to scorn, and the obliging young farmer above referred to told me he had shot at them hundreds of times with his rifle, without effect,—they always dodged his bullet. We had in our party a breach-loading rifle, which weapon is perhaps an appreciable moment of time quicker than the ordinary muzzle loader, and this the poor loon could not or did not dodge. He had not timed himself to

that species of fire-arm, and when, with his fellow, he swam about within rifle range of our camp, letting off volleys of his wild ironical *ha-ha*, he little suspected the dangerous gun that was matched against him. As the rifle cracked both loons made the gesture of diving, but only one of them disappeared beneath the water; and when he came to the surface in a few moments, a hundred or more yards away, and saw his companion did not follow, but was floating on the water where he had last seen him, he took the alarm and sped away in the distance. The bird I had killed was a magnificent specimen, and I looked him over with great interest. His glossy checkered coat, his banded neck, his snow-white breast, his powerful lance-shaped beak, his red eyes, his black, thin, slender, marvelously delicate feet and legs, issuing from his muscular thighs, and looking as if they had never touched the ground, his strong wings well forward, while his legs were quite at the apex, and the neat, elegant model of the entire bird, speed and quickness and strength stamped upon every feature,—all delighted and lingered in the eye. The loon appears like anything but a silly bird, unless you see him in some collection, or in the shop of the taxidermist, where he usually looks very tame and goose-like. Nature never meant the loon to stand up, or to use his feet and legs for other purposes than swimming. Indeed, he cannot stand except upon his tail in a perpendicular attitude, but in the collections he is poised upon his feet like a barn-yard fowl, all the wildness, and grace and alertness goes out of him. My specimen sits upon a table as upon the surface of the water, his feet trailing behind him, his body low and trim, his head elevated and slightly turned as if in the

act of bringing that fiery eye to bear upon you, and vigilance and power stamped upon every lineament.

The loon is to the fishes what the hawk is to the birds ; he swoops down to unknown depths upon them, and not even the wary trout can elude him. Uncle Nathan said he had seen the loon disappear, and in a moment come up with a large trout, which he would cut in two with his strong beak, and swallow piecemeal. Neither the loon nor the otter can bolt a fish under the water ; he must come to the surface to dispose of it. (I once saw a man eat a cake under water in London.) Our guide told me he had seen the parent loon swimming with a single young one upon its back. When closely pressed it dove, or "div" as he would have it, and left the young bird sitting upon the water. Then it too disappeared, and when the old one returned and called, it came out from the shore. On the wing overhead, the loon looks not unlike a very large duck, but when it alights it ploughs into the water like a bombshell. It probably cannot take flight from the land, as the one Gilbert White saw and describes in his letters was picked up in a field, unable to launch itself into the air.

From Pleasant Pond we went seven miles through the woods to Moxie Lake, following an overgrown lumberman's "tote" road, our canoe and supplies, etc., hauled on a sled by the young farmer with his three-year-old steers. I doubt if birch-bark ever made a rougher voyage than that. As I watched it above the bushes, the sled and the luggage being hidden, it appeared as if tossed in the wildest and most tempestuous sea. When the bushes closed above it I felt as if it had gone down, or been broken into a hundred pieces. Billows of rocks and logs, and chasms of

creeks and spring runs, kept it rearing and pitching in the most frightful manner. The steers went at a spanking pace; indeed, it was a regular bovine gale; but their driver clung to their side amid the brush and boulders with desperate tenacity, and seemed to manage them by signs and nudges, for he hardly uttered his orders aloud. But we got through without any serious mishap, passing Mosquito Creek and Mosquito Pond, and flanking Mosquito Mountain, but seeing no mosquitoes, and brought up at dusk at a lumberman's old hay-barn, standing in the midst of a lonely clearing on the shores of Moxie Lake.

Here we passed the night, and were lucky in having a good roof over our heads, for it rained heavily. After we were rolled in our blankets and variously disposed upon the haymow, Uncle Nathan lulled us to sleep by a long and characteristic yarn.

I had asked him, half jocosely, if he believed in "spooks"; but he took my question seriously, and without answering it directly, proceeded to tell us what he himself had known and witnessed. It was, by the way, extremely difficult either to surprise or to steal upon any of Uncle Nathan's private opinions and beliefs about matters and things. He was as shy of all debatable subjects as a fox is of a trap. He usually talked in a circle, just as he hunted moose and caribou, so as not to approach his point too rudely and suddenly. He would keep on the lee side of his interlocutor in spite of all one could do. He was thoroughly good and reliable, but the wild creatures of the woods, in pursuit of which he had spent so much of his life, had taught him a curious gentleness and indirection, and to keep himself in the background; he was careful that you should not scent his

opinions upon any subject at all polemic, but he would tell you what he had seen and known. What he had seen and known about spooks was briefly this :— In company with a neighbor he was passing the night with an old recluse who lived somewhere in these woods. Their host was an Englishman, who had the reputation of having murdered his wife some years before in another part of the country, and, deserted by his grown-up children, was eking out his days in poverty amid these solitudes. The three men were sleeping upon the floor, with Uncle Nathan next to a rude partition that divided the cabin into two rooms. At his head there was a door that opened into this other apartment. Late at night, Uncle Nathan said, he awoke and turned over, and his mind was occupied with various things, when he heard somebody behind the partition. He reached over and felt that both of his companions were in their places beside him, and he was somewhat surprised. The person, or whatever it was, in the other room moved about heavily, and pulled the table from its place beside the wall to the middle of the floor. “I was not dreaming,” said Uncle Nathan ; “I felt of my eyes twice to make sure, and they were wide open.” Presently the door opened ; he was sensible of the draught upon his head, and a woman’s form stepped heavily past him ; he felt the “swirl” of her skirts as she went by. Then there was a loud noise in the room as if some one had fallen their whole length upon the floor. “It jarred the house,” said he, “and woke everybody up. I asked old Mr. —— if he heard that noise. ‘Yes,’ said he, ‘it was thunder.’ But it was not thunder, I know that ;” and then added, “I was no more afraid than I am this minute. I never was the least mite afraid

in my life. And my eyes were wide open," he repeated ; " I felt of them twice ; but whether that was the speret of that man's murdered wife or not I cannot tell. They said she was an uncommon heavy woman." Uncle Nathan was a man of unusually quick and acute senses, and he did not doubt their evidence on this occasion any more than he did when they prompted him to level his rifle at a bear or a moose.

Moxie Lake lies much lower than Pleasant Pond, and its waters compared with those of the latter are as copper compared with silver. It is very irregular in shape ; now narrowing to the dimensions of a slow moving grassy creek, then expanding into a broad deep basin with rocky shores, and commanding the noblest mountain scenery. It is rarely that the pond-lily and the speckled trout are found together, — the fish the soul of the purest spring water, the flower the transfigured spirit of the dark mud and slime of sluggish summer streams and ponds ; yet in Moxie they were both found in perfection. Our camp was amid the birches, poplars, and white cedars near the head of the lake, where the best fishing at this season was to be had. Moxie has a small oval head, rather shallow, but bumpy with rocks ; a long, deep neck, full of springs, where the trout lie ; and a very broad chest, with two islands tufted with pine-trees for breasts. We swam in the head, we fished in the neck, or in a small section of it, a space about the size of the Adam's apple, and we paddled across and around the broad expanse below. Our birch bark was not finished and christened till we reached Moxie. The cedar lining was completed at Pleasant Pond, where we had the use of a *bateau*, but the rosin was not applied

to the seams till we reached this lake. When I knelt down in it for the first time and put its slender maple paddle into the water, it sprang away with such quickness and speed that it disturbed me in my seat. I had spurred a more restive and spirited steed than I was used to. In fact, I had never been in a craft that sustained so close a relation to my will, and was so responsive to my slightest wish. When I caught my first large trout from it, it sympathized a little too closely, and my enthusiasm started a leak, which, however, with a live coal and a piece of rosin, was quickly mended. You cannot perform much of a war-dance in a birch-bark canoe : better wait till you get on dry land. Yet as a boat it is not so shy and " ticklish " as I had imagined. One needs to be on the alert, as becomes a sportsman and an angler, and in his dealings with it must charge himself with three things,—precision, moderation, and circumspection.

Trout weighing four and five pounds have been taken at Moxie, but none of that size came to our hand. I realized the fondest hopes I had dared to indulge in when I hooked the first two-pounder of my life, and my extreme solicitude lest he get away I trust was pardonable. My friend, in relating the episode in camp, said I implored him to row me down in the middle of the lake that I might have room to manœuvre my fish. But the slander has barely a grain of truth in it. The water near us showed several old stakes broken off just below the surface, and my fish was determined to wrap my leader about one of these stakes ; it was only for the clear space a few yards farther out that I prayed. It was not long after that my friend found himself in an anxious frame of mind. He hooked a large trout, which came home on him so suddenly that

he had not time to reel up his line, and in his extremity he stretched his tall form into the air and lifted up his pole to an incredible height. He checked the trout before it got under the boat, but dared not come down an inch, and then began his amusing further elongation in reaching for his reel with one hand, while he carried it ten feet into the air with the other. A step-ladder would perhaps have been more welcome to him just then than at any other moment during his life. But the trout was saved, though my friend's buttons and suspenders suffered.

We learned a new trick in fly-fishing here, worth disclosing. It was not one day in four that the trout would take the fly on the surface. When the south wind was blowing and the clouds threatened rain, they would at times, notably about three o'clock, rise handsomely. But on all other occasions it was rarely that we could entice them up through the twelve or fifteen feet of water. Earlier in the season they are not so lazy and indifferent, but the August languor and drowsiness were now upon them. So we learned by a lucky accident to fish deep for them, even weighting our leaders with a shot, and allowing the flies to sink nearly to the bottom. After a moment's pause we would draw them slowly up, and when half or two thirds of the way to the top the trout would strike, when the sport became lively enough. Most of our fish were taken in this way. There is nothing like the flash and the strike at the surface, and perhaps only the need of food will ever tempt the genuine angler into any more prosaic style of fishing; but if you must go below the surface, a shotted leader is the best thing to use.

Our camp-fire at night served more purposes than

one ; from its embers and flickering shadows, Uncle Nathan read us many a tale of his life in the woods. They were the same old hunter's stories, except that they evidently had the merit of being strictly true, and hence were not very thrilling or marvelous. Uncle Nathan's tendency was rather to tone down and belittle his experiences than to exaggerate them. If he ever bragged at all (and I suspect he did just a little, when telling us how he outshot one of the famous riflemen of the American team, whom he was guiding through these woods), he did it in such a sly, round-about way that it was hard to catch him at it. His passage with the rifleman referred to shows the difference between the practical off-hand skill of the hunter in the woods and the science of the long-range target hitter. Mr. Bull's Eye had heard that his guide was a capital shot and had seen some proof of it, and hence could not rest till he had had a trial of skill with him. Uncle Nathan, being the challenged party, had the right to name the distance and the conditions. A piece of white paper the size of a silver dollar was put upon a tree twelve rods off, the contestants to fire three shots each off-hand. Uncle Nathan's first bullet barely missed the mark, but the other two were planted well into it. Then the great rifleman took his turn, and missed every time.

"By hemp !" said Uncle Nathan, "I was sorry I shot so well, Mr. —— took it so to heart; and I had used his own rifle, too. He did not get over it for a week."

But far more ignominious was the failure of Mr. Bull's Eye when he saw his first bear. They were paddling slowly and silently down Dead River, when the guide heard a slight noise in the bushes just be-

hind a little bend. He whispered to the rifleman, who sat kneeling in the bow of the boat, to take his rifle. But instead of doing so he picked up his two-barreled shot-gun. As they turned the point, there stood a bear not twenty yards away, drinking from the stream. Uncle Nathan held the canoe, while the man who had come so far in quest of this very game was trying to lay down his shot-gun and pick up his rifle. "His hand moved like the hand of a clock," said Uncle Nathan, "and I could hardly keep my seat. I knew the bear would see us in a moment more, and run." Instead of laying his gun by his side, where it belonged, he reached it across in front of him and laid it upon his rifle, and in trying to get the latter from under it a noise was made; the bear heard it and raised his head. Still there was time, for as the bear sprang into the woods he stopped and looked back, — "as I knew he would," said the guide; yet the marksman was not ready. "By hemp! I could have shot three bears," exclaimed Uncle Nathan, "while he was getting that rifle to his face!"

Poor Mr. Bull's Eye was deeply humiliated. "Just the chance I had been looking for," he said, "and my wits suddenly left me."

As a hunter Uncle Nathan always took the game on its own terms, that of still-hunting. He even shot foxes in this way, going into the fields in the fall just at break of day, and watching for them about their mousing haunts. One morning, by these tactics, he shot a black fox; a fine specimen, he said, and a wild one, for he stopped and looked and listened every few yards.

He had killed over two hundred moose, a large number of them at night on the lakes. His method

was to go out in his canoe and conceal himself by some point or island, and wait till he heard the game. In the fall the moose comes into the water to eat the large fibrous roots of the pond-lilies. He splashes along till he finds a suitable spot, when he begins feeding, sometimes thrusting his head and neck several feet under water. The hunter listens, and when the moose lifts his head and the rills of water run from it, and he hears him "swash" the lily roots about to get off the mud, it is his time to start. Silently as a shadow he creeps up on the moose, who by the way, it seems, never expects the approach of danger from the water side. If the hunter accidentally makes a noise the moose looks toward the shore for it. There is always a slight gleam on the water, Uncle Nathan says, even in the darkest night, and the dusky form of the moose can be distinctly seen upon it. When the hunter sees this darker shadow he lifts his gun to the sky and gets the range of its barrels, then lowers it till it covers the mark, and fires.

The largest moose Uncle Nathan ever killed is mounted in the State House at Augusta. He shot him while hunting in winter on snow-shoes. The moose was reposing upon the ground, with his head stretched out in front of him, as one may sometimes see a cow resting. The position was such that only a quartering shot through the animal's hip could reach its heart. Studying the problem carefully, and taking his own time, the hunter fired. The moose sprang into the air, turned, and came with tremendous strides straight toward him. "I knew he had not seen or scented me," said Uncle Nathan, "but, by hemp, I wished myself somewhere else just then; for I was lying right down in his path." But the noble animal

stopped a few yards short, and fell dead with a bullet-hole through his heart.

When the moose yard in the winter, that is, restrict their wanderings to a well-defined section of the forest or mountain, trampling down the snow and beating paths in all directions, they browse off only the most dainty morsels first; when they go over the ground a second time they crop a little cleaner; the third time they sort still closer, till by and by nothing is left. Spruce, hemlock, poplar, the barks of various trees, everything within reach, is cropped close. When the hunter comes upon one of these yards the problem for him to settle is, Where are the moose? for it is absolutely necessary that he keep on the lee side of them. So he considers the lay of the land, the direction of the wind, the time of day, the depth of the snow, examines the spoor, the cropped twigs, and studies every hint and clew like a detective. Uncle Nathan said he could not explain to another how he did it, but he could usually tell in a few minutes in what direction to look for the game. His experience had ripened into a kind of intuition or winged reasoning that was above rules.

He said that most large game, deer, caribou, moose, bear, when started by the hunter and not much scared, were sure to stop and look back before disappearing from sight: he usually waited for this last and best chance to fire. He told us of a huge bear he had seen one morning while still-hunting foxes in the fields; the bear saw him, and got into the woods before he could get a good shot. In her course some distance up the mountain was a bald, open spot, and he felt sure when she crossed this spot she would pause and look behind her; and sure enough, like

Lot's wife, her curiosity got the better of her; she stopped to have a final look, and her travels ended there and then.

Uncle Nathan had trapped and shot a great many bears, and some of his experiences revealed an unusual degree of sagacity in this animal. One April, when the weather began to get warm and thawy, an old bear left her den in the rocks and built a large, warm nest of grass, leaves, and the bark of the white cedar, under a tall balsam fir that stood in a low, sunny, open place amid the mountains. Hither she conducted her two cubs, and the family began life in what might be called their spring residence. The tree above them was for shelter, and for refuge for the cubs in case danger approached, as it soon did in the form of Uncle Nathan. He happened that way soon after the bear had moved. Seeing her track in the snow, he concluded to follow it. When the bear had passed, the snow had been soft and sposhy, and she had "slumped," he said, several inches. It was now hard and slippery. As he neared the tree the track turned and doubled, and tacked this way and that, and led through the worst brush and brambles to be found. This was a shrewd thought of the old bear; she could thus hear her enemy coming a long time before he drew very near. When Uncle Nathan finally reached the nest, he found it empty, but still warm. Then he began to circle about and look for the bear's footprints or nail-prints upon the frozen snow. Not finding them the first time, he took a larger circle, then a still larger; finally he made a long *détour*, and spent nearly an hour searching for some clew to the direction the bear had taken, but all to no purpose. Then he returned to the tree and

scrutinized it. The foliage was very dense, but presently he made out one of the cubs near the top, standing up amid the branches, and peering down at him. This he killed. Further search only revealed a mass of foliage apparently more dense than usual, but a bullet sent into it was followed by loud whimpering and crying, and the other baby bear came tumbling down. In leaving the place, greatly puzzled as to what had become of the mother bear, Uncle Nathan followed another of her frozen tracks, and after about a quarter of a mile saw beside it, upon the snow, the fresh trail he had been in search of. In making her escape the bear had stepped exactly in her old tracks that were hard and icy, and had thus left no mark till she took to the snow again.

During his trapping expeditions into the woods in midwinter, I was curious to know how Uncle Nathan passed the nights, as we were twice pinched with the cold at that season in our tent and blankets. It was no trouble to keep warm, he said, in the coldest weather. As night approached, he would select a place for his camp on the side of a hill. With one of his snow-shoes he would shovel out the snow till the ground was reached, carrying the snow out in front, as we scrape the earth out of the side of a hill to level up a place for the house and yard. On this level place, which, however, was made to incline slightly toward the hill, his bed of boughs was made. On the ground he had uncovered he built his fire. His bed was thus on a level with the fire, and the heat could not thaw the snow under him and let him down, or the burning logs roll upon him. With a steep ascent behind it the fire burned better, and the wind was not so apt to drive the smoke and blaze in upon him.

Then, with the long, curving branches of the spruce stuck thickly around three sides of the bed, and curving over and uniting their tops above it, a shelter was formed that would keep out the cold and the snow, and that would catch and retain the warmth of the fire. Rolled in his blanket in such a nest, Uncle Nathan had passed hundreds of the most frigid winter nights.

One day we made an excursion of three miles through the woods to Bald Mountain, following a dim trail. We saw, as we filed silently along, plenty of signs of caribou, deer, and bear, but were not blessed with a sight of either of the animals themselves. I noticed that Uncle Nathan, in looking through the woods, did not hold his head as we did, but thrust it slightly forward, and peered under the branches like a deer or other wild creature.

The summit of Bald Mountain was the most impressive mountain-top I had ever seen, mainly, perhaps, because it was one enormous crown of nearly naked granite. The rock had that gray, elemental, eternal look which granite alone has. One seemed to be face to face with the gods of the fore-world. Like an atom, like a breath of to-day, we were suddenly confronted by abysmal geologic time,—the eternities past and the eternities to come. The enormous cleavage of the rocks, the appalling cracks and fissures, the rent bowlders, the smitten granite floors, gave one a new sense of the power of heat and frost. In one place we noticed several deep parallel grooves, made by the old glaciers. In the depressions on the summit there was a hard, black, peaty-like soil that looked indescribably ancient and unfamiliar. Out of this mould, that might have come from the moon or the interplanetary spaces, were growing mountain cran-

berries and blueberries or huckleberries. We were soon so absorbed in gathering the latter that we were quite oblivious of the grandeur about us. It is these blueberries that attract the bears. In eating them, Uncle Nathan said, they take the bushes in their mouths, and by an upward movement strip them clean of both leaves and berries. We were constantly on the lookout for the bears, but failed to see any. Yet a few days afterward, when two of our party returned here and encamped upon the mountain, they saw five during their stay, but failed to get a good shot. The rifle was in the wrong place each time. The man with the shot-gun saw an old bear and two cubs lift themselves from behind a rock and twist their noses around for his scent, and then shrink away. They were too far off for his buckshot. I must not forget the superb view that lay before us, a wilderness of woods and waters stretching away to the horizon on every hand. Nearly a dozen lakes and ponds could be seen, and in a clearer atmosphere the foot of Moose-head Lake would have been visible. The highest and most striking mountain to be seen was Mount Bigelow, rising above Dead River, far to the west, and its two sharp peaks notching the horizon like enormous saw-teeth. We walked around and viewed curiously a huge boulder on the top of the mountain that had been split in two vertically, and one of the halves moved a few feet out of its bed. It looked recent and familiar, but suggested gods instead of men. The force that moved the rock had plainly come from the north. I thought of a similar boulder I had seen not long before on the highest point of the Shawangunk Mountains, in New York, one side of which is propped up with a large stone, as wall-builders prop up a rock

to wrap a chain around it. The rock seems poised lightly, and has but a few points of bearing. In this instance, too, the power had come from the north.

The prettiest botanical specimen my trip yielded was a little plant that bears the ugly name of horned bladderwort (*Utricularia cornuta*), and which I found growing in marshy places along the shores of Moxie Lake. It has a slender, naked stem nearly a foot high, crowned by two or more large deep yellow flowers,—flowers the shape of little bonnets or hoods. One almost expected to see tiny faces looking out of them. This illusion is heightened by the horn or spur of the flower, which projects from the hood like a long tapering chin,—some masker's device. Then the cape behind,—what a smart upward curve it has, as if spurned by the fairy shoulders it was meant to cover! But perhaps the most notable thing about the flower was its fragrance,—the richest and strongest perfume I have ever found in a wild flower. This our botanist, Gray, does not mention, as if one should describe the lark and forget its song. The fragrance suggested that of white clover, but was more rank and spicy.

The woods about Moxie Lake were literally carpeted with *Linnæa*. I had never seen it in such profusion. In early summer, the period of its bloom, what a charming spectacle the mossy floors of these remote woods must present! The flowers are purple rose-color, nodding and fragrant. Another very abundant plant in these woods was the *Clintonia borealis*. Uncle Nathan said it was called "bear's corn," though he did not know why. The only noticeable flower by the Maine roadsides at this season that is not common in other parts of the country is the harebell. Its

bright blue, bell-shaped corolla shone out from amid the dry grass and weeds all along the route. It was one of the most delicate roadside flowers I had ever seen.

The only new bird I saw in Maine was the pileated woodpecker, or black "log cock," called by Uncle Nathan "wood cock." I had never before seen or heard this bird, and its loud cackle in the woods about Moxie was a new sound to me. It is the wildest and largest of our northern woodpeckers, and the rarest. Its voice and the sound of its hammer are heard only in the depths of the northern woods. It is about as large as a crow, and nearly as black.

We stayed a week at Moxie, or until we became surfeited with its trout, and had killed the last Merganser duck that lingered about our end of the lake. The trout that had accumulated on our hands we had kept alive in a large champagne basket submerged in the lake, and the morning we broke camp the basket was towed to the shore and opened; and after we had feasted our eyes upon the superb spectacle, every trout, twelve or fifteen in number, some of them two-pounders, was allowed to swim back into the lake. They went leisurely, in couples and in trios, and were soon kicking up their heels in their old haunts. I expect that the divinity who presides over Moxie will see to it that every one of those trout, doubled in weight, comes to our basket in the future.

WINTER NEIGHBORS.

THE country is more of a wilderness, more of a wild solitude, in the winter than in the summer. The wild comes out. The urban, the cultivated, is hidden or negatived. You shall hardly know a good field from a poor, a meadow from a pasture, a park from a forest. Lines and boundaries are disregarded ; gates and bar-ways are unclosed ; man lets go his hold upon the earth ; title-deeds are deep buried beneath the snow ; the best-kept grounds relapse to a state of nature ; under the pressure of the cold all the wild creatures become outlaws, and roam abroad beyond their usual haunts. The partridge comes to the orchard for buds ; the rabbit comes to the garden and lawn ; the crows and jays come to the ash-heap and corn-crib, the snow-buntings to the stack and to the barn-yard ; the sparrows pilfer from the domestic fowls ; the pine grosbeak comes down from the north and shears your maples of their buds ; the fox prowls about your premises at night, and the red squirrels find your grain in the barn or steal the butternuts from your attic. In fact, winter, like some great calamity, changes the status of most creatures and sets them adrift. Winter, like poverty, makes us acquainted with strange bedfellows.

For my part, my nearest approach to a strange bedfellow is the little gray rabbit that has taken up her abode under my study floor. As she spends the day

here and is out larking at night, she is not much of a bedfellow after all. It is probable that I disturb her slumbers more than she does mine. I think she is some support to me under there — a silent wild-eyed witness and backer; a type of the gentle and harmless in savage nature. She has no sagacity to give me or lend me, but that soft, nimble foot of hers, and that touch as of cotton wherever she goes, are worthy of emulation. I think I can feel her good-will through the floor, and I hope she can mine. When I have a happy thought I imagine her ears twitch, especially when I think of the sweet apple I will place by her doorway at night. I wonder if that fox chanced to catch a glimpse of her the other night when he stealthily leaped over the fence near by and walked along between the study and the house? How clearly one could read that it was not a little dog that had passed there. There was something furtive in the track; it shied off away from the house and around it, as if eying it suspiciously; and then it had the caution and deliberation of the fox — bold, bold, but not too bold; wariness was in every footprint. If it had been a little dog that had chanced to wander that way, when he crossed my path he would have followed it up to the barn and have gone smelling around for a bone; but this sharp, cautious track held straight across all others, keeping five or six rods from the house, up the hill, across the highway towards a neighboring farmstead, with its nose in the air and its eye and ear alert, so to speak.

A winter neighbor of mine in whom I am interested, and who perhaps lends me his support after his kind, is a little red owl, whose retreat is in the heart of an old apple-tree just over the fence. Where he

keeps himself in spring and summer I do not know, but late every fall, and at intervals all winter, his hiding-place is discovered by the jays and nut-hatches, and proclaimed from the tree-tops for the space of half an hour or so, with all the powers of voice they can command. Four times during one winter they called me out to behold this little ogre feigning sleep in his den, sometimes in one apple-tree, sometimes in another. Whenever I heard their cries, I knew my neighbor was being berated. The birds would take turns at looking in upon him and uttering their alarm-notes. Every jay within hearing would come to the spot and at once approach the hole in the trunk or limb, and with a kind of breathless eagerness and excitement take a peep at the owl, and then join the outcry. When I approached they would hastily take a final look and then withdraw and regard my movements intently. After accustoming my eye to the faint light of the cavity for a few moments, I could usually make out the owl at the bottom feigning sleep. Feigning, I say, because this is what he really did, as I first discovered one day when I cut into his retreat with the axe. The loud blows and the falling chips did not disturb him at all. When I reached in a stick and pulled him over on his side, leaving one of his wings spread out, he made no attempt to recover himself, but lay among the chips and fragments of decayed wood, like a part of themselves. Indeed, it took a sharp eye to distinguish him. Nor till I had pulled him forth by one wing, rather rudely, did he abandon his trick of simulated sleep or death. Then, like a detected pickpocket, he was suddenly transformed into another creature. His eyes flew wide open, his talons clutched my finger, his ears were de-

pressed, and every motion and look said, "Hands off, at your peril." Finding this game did not work, he soon began to "play 'possum" again. I put a cover over my study wood-box and kept him captive for a week. Look in upon him any time, night or day, and he was apparently wrapped in the profoundest slumber; but the live mice which I put into his box from time to time found his sleep was easily broken; there would be a sudden rustle in the box, a faint squeak, and then silence. After a week of captivity I gave him his freedom in the full sunshine: no trouble for him to see which way and where to go.

Just at dusk in the winter nights, I often hear his soft *bur-r-r-r*, very pleasing and bell-like. What a furtive, woody sound it is in the winter stillness, so unlike the harsh scream of the hawk. But all the ways of the owl are ways of softness and duskiness. His wings are shod with silence, his plumage is edged with down.

Another owl neighbor of mine, with whom I pass the time of day more frequently than with the last, lives farther away. I pass his castle every night on my way to the post-office, and in winter, if the hour is late enough, am pretty sure to see him standing in his doorway, surveying the passers-by and the landscape through narrow slits in his eyes. For four successive winters now have I observed him. As the twilight begins to deepen he rises out of his cavity in the apple-tree, scarcely faster than the moon rises from behind the hill, and sits in the opening, completely framed by its outlines of gray bark and dead wood, and by his protective coloring virtually invisible to every eye that does not know he is there. Probably my own is the only eye that has ever penetrated

his secret, and mine never would have done so had I not chanced on one occasion to see him leave his retreat and make a raid upon a shrike that was impaling a shrew-mouse upon a thorn in a neighboring tree, and which I was watching. Failing to get the mouse, the owl returned swiftly to his cavity, and ever since, while going that way, I have been on the lookout for him. Dozens of teams and foot-passengers pass him late in the day, but he regards them not, nor they him. When I come alone and pause to salute him, he opens his eyes a little wider, and, appearing to recognize me, quickly shrinks and fades into the background of his door in a very weird and curious manner. When he is not at his outlook, or when he is, it requires the best powers of the eye to decide the point, as the empty cavity itself is almost an exact image of him. If the whole thing had been carefully studied it could not have answered its purpose better. The owl stands quite perpendicular, presenting a front of light mottled gray; the eyes are closed to a mere slit, the ear-feathers depressed, the beak buried in the plumage, and the whole attitude is one of silent, motionless waiting and observation. If a mouse should be seen crossing the highway, or scudding over any exposed part of the snowy surface in the twilight, the owl would doubtless swoop down upon it. I think the owl has learned to distinguish me from the rest of the passers-by; at least, when I stop before him, and he sees himself observed, he backs down into his den, as I have said, in a very amusing manner. Whether bluebirds, nut-hatches, and chickadees — birds that pass the night in cavities of trees — ever run into the clutches of the dozing owl, I should be glad to know. My impression is, however, that they

seek out smaller cavities. An old willow by the roadside blew down one summer, and a decayed branch broke open, revealing a brood of half-fledged owls, and many feathers and quills of bluebirds, orioles, and other songsters, showing plainly enough why all birds fear and berate the owl.

The English house sparrows, that are so rapidly increasing among us, and that must add greatly to the food supply of the owls and other birds of prey, seek to baffle their enemies by roosting in the densest evergreens they can find, in the arbor-vitæ, and in hemlock hedges. Soft-winged as the owl is, he cannot steal in upon such a retreat without giving them warning.

These sparrows are becoming about the most noticeable of my winter neighbors, and a troop of them every morning watch me put out the hens' feed, and soon claim their share. I rather encouraged them in their neighborliness, till one day I discovered the snow under a favorite plum-tree where they most frequently perched covered with the scales of the fruit-buds. On investigating I found that the tree had been nearly stripped of its buds — a very unneighborly act on the part of the sparrows, considering, too, all the cracked corn I had scattered for them. So I at once served notice on them that our good understanding was at an end. And a hint is as good as a kick with this bird. The stone I hurled among them, and the one with which I followed them up, may have been taken as a kick; but they were only a hint of the shot-gun that stood ready in the corner. The sparrows left in high dudgeon, and were not back again in some days, and were then very shy. No doubt the time is near at hand when we shall have to wage serious war upon

these sparrows, as they long have had to do on the continent of Europe. And yet it will be hard to kill the little wretches, the only Old World bird we have. When I take down my gun to shoot them I shall probably remember that the Psalmist said, "I watch, and am as a sparrow alone upon the house-top," and maybe the recollection will cause me to stay my hand. The sparrows have the Old World hardiness and prolificness; they are wise and tenacious of life, and we shall find it by and by no small matter to keep them in check. Our native birds are much different, less prolific, less shrewd, less aggressive and persistent, less quick-witted and able to read the note of danger or hostility,—in short, less sophisticated. Most of our birds are yet essentially wild, that is, little changed by civilization. In winter, especially, they sweep by me and around me in flocks,—the Canada sparrow, the snow-bunting, the shore-lark, the pine grosbeak, the red-poll, the cedar-bird,—feeding upon frozen apples in the orchard, upon cedar-berries, upon maple-buds, and the berries of the mountain ash, and the celtis, and upon the seeds of the weeds that rise above the snow in the field, or upon the hay-seed dropped where the cattle have been foddered in the barn-yard or about the distant stack; but yet taking no heed of man, in no way changing their habits so as to take advantage of his presence in nature. The pine grosbeak will come in numbers upon your porch to get the black drupes of the honeysuckle or the woodbine, or within reach of your windows to get the berries of the mountain-ash, but they know you not; they look at you as innocently and unconcernedly as at a bear or moose in their native north, and your house is no more to them than a ledge of rocks.

The only ones of my winter neighbors that actually rap at my door are the nut-hatches and woodpeckers, and these do not know that it is my door. My retreat is covered with the bark of young chestnut-trees, and the birds, I suspect, mistake it for a huge stump that ought to hold fat grubs (there is not even a book-worm inside of it), and their loud rapping often makes me think I have a caller indeed. I place fragments of hickory-nuts in the interstices of the bark, and thus attract the nut-hatches; a bone upon my window-sill attracts both nut-hatches and the downy woodpecker. They peep in curiously through the window upon me, pecking away at my bone, too often a very poor one. A bone nailed to a tree a few feet in front of the window attracts crows as well as lesser birds. Even the slate-colored snow-bird, a seed-eater, comes and nibbles it occasionally.

The bird that seems to consider he has the best right to the bone both upon the tree and upon the sill is the downy woodpecker, my favorite neighbor among the winter birds, to whom I will mainly devote the remainder of this chapter. His retreat is but a few paces from my own, in the decayed limb of an apple-tree which he excavated several autumns ago. I say "he" because the red plume on the top of his head proclaims the sex. It seems not to be generally known to our writers upon ornithology that certain of our woodpeckers — probably all the winter residents — each fall excavate a limb or the trunk of a tree in which to pass the winter, and that the cavity is abandoned in the spring, probably for a new one in which nidification takes place. So far as I have observed, these cavities are drilled out only by the males. Where the females take up their quarters I am not so well in-

formed, though I suspect that they use the abandoned holes of the males of the previous year.

The particular woodpecker to which I refer drilled his first hole in my apple-tree one fall four or five years ago. This he occupied till the following spring, when he abandoned it. The next fall he began a hole in an adjoining limb, later than before, and when it was about half completed a female took possession of his old quarters. I am sorry to say that this seemed to enrage the male very much, and he persecuted the poor bird whenever she appeared upon the scene. He would fly at her spitefully and drive her off. One chilly November morning, as I passed under the tree, I heard the hammer of the little architect in his cavity, and at the same time saw the persecuted female sitting at the entrance of the other hole as if she would fain come out. She was actually shivering, probably from both fear and cold. I understood the situation at a glance; the bird was afraid to come forth and brave the anger of the male. Not till I had rapped smartly upon the limb with my stick did she come out and attempt to escape; but she had not gone ten feet from the tree before the male was in hot pursuit, and in a few moments had driven her back to the same tree, where she tried to avoid him among the branches. A few days after, he rid himself of his unwelcome neighbor in the following ingenious manner: he fairly scuttled the other cavity; he drilled a hole into the bottom of it that let in the light and the cold, and I saw the female there no more. I did not see him in the act of rendering this tenement uninhabitable; but one morning, behold it was punctured at the bottom, and the circumstances all seemed to point to him as the author of it. There is probably

no gallantry among the birds except at the mating season. I have frequently seen the male woodpecker drive the female away from the bone upon the tree. When she hopped around to the other end and timidly nibbled it, he would presently dart spitefully at her. She would then take up her position in his rear and wait till he had finished his meal. The position of the female among the birds is very much the same as that of woman among savage tribes. Most of the drudgery of life falls upon her, and the leavings of the males are often her lot.

My bird is a genuine little savage, doubtless, but I value him as a neighbor. It is a satisfaction during the cold or stormy winter nights to know he is warm and cosy there in his retreat. When the day is bad and unfit to be abroad in, he is there too. When I wish to know if he is at home, I go and rap upon his tree, and, if he is not too lazy or indifferent, after some delay he shows his head in his round doorway about ten feet above, and looks down inquiringly upon me—sometimes latterly I think half resentfully, as much as to say, “I would thank you not to disturb me so often.” After sundown, he will not put his head out any more when I call, but as I step away I can get a glimpse of him inside looking cold and reserved. He is a late riser, especially if it is a cold or disagreeable morning, in this respect being like the barn fowls; it is sometimes near nine o’clock before I see him leave his tree. On the other hand, he comes home early, being in if the day is unpleasant by four P. M. He lives all alone; in this respect I do not commend his example. Where his mate is I should like to know.

I have discovered several other woodpeckers in ad-

joining orchards, each of which has a like home and leads a like solitary life. One of them has excavated a dry limb within easy reach of my hand, doing the work also in September. But the choice of tree was not a good one; the limb was too much decayed, and the workman had made the cavity too large; a chip had come out, making a hole in the outer wall. Then he went a few inches down the limb and began again, and excavated a large, commodious chamber, but had again come too near the surface; scarcely more than the bark protected him in one place, and the limb was very much weakened. Then he made another attempt still farther down the limb, and drilled in an inch or two, but seemed to change his mind; the work stopped, and I concluded the bird had wisely abandoned the tree. Passing there one cold, rainy November day, I thrust in my two fingers and was surprised to feel something soft and warm: as I drew away my hand the bird came out, apparently no more surprised than I was. It had decided, then, to make its home in the old limb; a decision it had occasion to regret, for not long after, on a stormy night, the branch gave way and fell to the ground.

“When the bough breaks the cradle will fall,
And down will come baby, cradle and all.”

Such a cavity makes a snug, warm home, and when the entrance is on the under side of the limb, as is usual, the wind and snow cannot reach the occupant. Late in December, while crossing a high, wooded mountain, lured by the music of fox-hounds, I discovered fresh yellow chips strewing the new-fallen snow, and at once thought of my woodpeckers. On looking around I saw where one had been at work excavating a lodge in a small yellow birch. The ori-

fice was about fifteen feet from the ground, and appeared as round as if struck with a compass. It was on the east side of the tree, so as to avoid the prevailing west and northwest winds. As it was nearly two inches in diameter, it could not have been the work of the downy, but must have been that of the hairy, or else the yellow-bellied woodpecker. His home had probably been wrecked by some violent wind, and he was thus providing himself another. In digging out these retreats the woodpeckers prefer a dry, brittle trunk, not too soft. They go in horizontally to the centre and then turn downward, enlarging the tunnel as they go, till when finished it is the shape of a long, deep pear.

Another trait our woodpeckers have that endears them to me, and that has never been pointedly noticed by our ornithologists, is their habit of drumming in the spring. They are songless birds, and yet all are musicians ; they make the dry limbs eloquent of the coming change. Did you think that loud, sonorous hammering which proceeded from the orchard or from the near woods on that still March or April morning was only some bird getting its breakfast ? It is downy, but he is not rapping at the door of a grub ; he is rapping at the door of spring, and the dry limb thrills beneath the ardor of his blows. Or, later in the season, in the dense forest or by some remote mountain lake, does that measured rhythmic beat that breaks upon the silence, first three strokes following each other rapidly, succeeded by two louder ones with longer intervals between them, and that has an effect upon the alert ear as if the solitude itself had at last found a voice — does that suggest anything less than a deliberate musical performance ? In fact, our woodpeckers

are just as characteristically drummers as is the ruffed grouse, and they have their particular limbs and stubs to which they resort for that purpose. Their need of expression is apparently just as great as that of the song-birds, and it is not surprising that they should have found out that there is music in a dry, seasoned limb which can be evoked beneath their beaks.

A few seasons ago a downy woodpecker, probably the individual one who is now my winter neighbor, began to drum early in March in a partly decayed apple-tree that stands in the edge of a narrow strip of woodland near me. When the morning was still and mild I would often hear him through my window before I was up, or by half-past six o'clock, and he would keep it up pretty briskly till nine or ten o'clock, in this respect resembling the grouse, which do most of their drumming in the forenoon. His drum was the stub of a dry limb about the size of one's wrist. The heart was decayed and gone, but the outer shell was hard and resonant. The bird would keep his position there for an hour at a time. Between his drummings he would preen his plumage and listen as if for the response of the female, or for the drum of some rival. How swift his head would go when he was delivering his blows upon the limb! His beak wore the surface perceptibly. When he wished to change the key, which was quite often, he would shift his position an inch or two to a knot which gave out a higher, shriller note. When I climbed up to examine his drum he was much disturbed. I did not know he was in the vicinity, but it seems he saw me from a near tree, and came in haste to the neighboring branches, and with spread plumage and a sharp note demanded plainly enough what my business was with

his drum. I was invading his privacy, desecrating his shrine, and the bird was much put out. After some weeks the female appeared; he had literally drummed up a mate; his urgent and oft-repeated advertisement was answered. Still the drumming did not cease, but was quite as fervent as before. If a mate could be won by drumming she could be kept and entertained by more drumming; courtship should not end with marriage. If the bird felt musical before, of course he felt much more so now. Besides that, the gentle deities needed propitiating in behalf of the nest and young as well as in behalf of the mate. After a time a second female came, when there was war between the two. I did not see them come to blows, but I saw one female pursuing the other about the place, and giving her no rest for several days. She was evidently trying to run her out of the neighborhood. Now and then she, too, would drum briefly, as if sending a triumphant message to her mate.

The woodpeckers do not each have a particular dry limb to which they resort at all times to drum, like the one I have described. The woods are full of suitable branches, and they drum more or less here and there as they are in quest of food; yet I am convinced each one has its favorite spot, like the grouse, to which it resorts, especially in the morning. The sugar-maker in the maple-woods may notice that this sound proceeds from the same tree or trees about his camp with great regularity. A woodpecker in my vicinity has drummed for two seasons on a telegraph-pole, and he makes the wires and glass insulators ring. Another drums on a thin board on the end of a long grape-arbor, and on still mornings can be heard a long distance.

A friend of mine in a Southern city tells me of a red-headed woodpecker that drums upon a lightning-rod on his neighbor's house. Nearly every clear, still morning at certain seasons, he says, this musical rapping may be heard. "He alternates his tapping with his stridulous call, and the effect on a cool, autumn-like morning is very pleasing."

The high-hole appears to drum more promiscuously than does the downy. He utters his long, loud spring call, *whick—whick—whick—whick*, and then begins to rap with his beak upon his perch before the last note has reached your ear. I have seen him drum sitting upon the ridge of the barn. The log cock, or pileated woodpecker, the largest and wildest of our Northern species, I have never heard drum. His blows should wake the echoes.

When the woodpecker is searching for food, or laying siege to some hidden grub, the sound of his hammer is dead or muffled, and is heard but a few yards. It is only upon dry, seasoned timber, freed of its bark, that he beats his reveille to spring and wooes his mate.

Wilson was evidently familiar with this vernal drumming of the woodpeckers, but quite misinterprets it. Speaking of the red-bellied species, he says: "It rattles like the rest of the tribe on the dead limbs, and with such violence as to be heard in still weather more than half a mile off; and listens to hear the insect it has alarmed." He listens rather to hear the drum of his rival or the brief and coy response of the female; for there are no insects in these dry limbs.

On one occasion I saw downy at his drum when a female flew quickly through the tree and alighted a few yards beyond him. He paused instantly, and

kept his place, apparently without moving a muscle. The female, I took it, had answered his advertisement. She flitted about from limb to limb (the female may be known by the absence of the crimson spot on the back of the head), apparently full of business of her own, and now and then would drum in a shy, tentative manner. The male watched her a few moments, and, convinced perhaps that she meant business, struck up his liveliest tune, then listened for her response. As it came back timidly but promptly, he left his perch and sought a nearer acquaintance with the prudent female. Whether or not a match grew out of this little flirtation I cannot say.

Our smaller woodpeckers are sometimes accused of injuring the apple and other fruit trees, but the depredator is probably the larger and rarer yellow-bellied species. One autumn I caught one of these fellows in the act of sinking long rows of his little wells in the limb of an apple-tree. There were series of rings of them, one above another, quite around the stem, some of them the third of an inch across. They are evidently made to get at the tender, juicy bark, or cambium layer, next to the hard wood of the tree. The health and vitality of the branch are so seriously impaired by them that it often dies.

In the following winter the same bird (probably) tapped a maple-tree in front of my window in fifty-six places; and when the day was sunny, and the sap oozed out, he spent most of his time there. He knew the good sap-days, and was on hand promptly for his tipple; cold and cloudy days he did not appear. He knew which side of the tree to tap, too, and avoided the sunless northern exposure. When one series of well-holes failed to supply him, he would sink another,

drilling through the bark with great ease and quickness. Then, when the day was warm, and the sap ran freely, he would have a regular sugar-maple debauch, sitting there by his wells hour after hour, and as fast as they became filled sipping out the sap. This he did in a gentle, caressing manner that was very suggestive. He made a row of wells near the foot of the tree, and other rows higher up, and he would hop up and down the trunk as these became filled. He would hop down the tree backward with the utmost ease, throwing his tail outward and his head inward at each hop. When the wells would freeze or his thirst become slaked, he would ruffle his feathers, draw himself together, and sit and doze in the sun on the side of the tree. He passed the night in a hole in an apple-tree not far off. He was evidently a young bird, not yet having the plumage of the mature male or female, and yet he knew which tree to tap and where to tap it. I saw where he had bored several maples in the vicinity, but no oaks or chestnuts. I nailed up a fat bone near his sap-works : the downy woodpecker came there several times a day to dine ; the nut-hatch came, and even the snow-bird took a taste occasionally ; but this sap-sucker never touched it ; the sweet of the tree sufficed for him. This woodpecker does not breed or abound in my vicinity ; only stray specimens are now and then to be met with in the colder months. As spring approached, the one I refer to took his departure.

I must bring my account of my neighbor in the tree down to the latest date ; so after the lapse of a year I add the following notes. The last day of February was bright and springlike. I heard the first sparrow

sing that morning and the first screaming of the circling hawks, and about seven o'clock the first drumming of my little friend. His first notes were uncertain and at long intervals, but by and by he warmed up and beat a lively tattoo. As the season advanced he ceased to lodge in his old quarters. I would rap and find nobody at home. Was he out on a lark, I said, the spring fever working in his blood? After a time his drumming grew less frequent, and finally, in the middle of April, ceased entirely. Had some accident befallen him, or had he wandered away to fresh fields, following some siren of his species? Probably the latter. Another bird that I had under observation also left his winter-quarters in the spring. This, then, appears to be the usual custom. The wrens and the nut-hatches and chickadees succeed to these abandoned cavities, and often have amusing disputes over them. The nut-hatches frequently pass the night in them, and the wrens and chickadees nest in them. I have further observed that in excavating a cavity for a nest the downy woodpecker makes the entrance smaller than when he is excavating his winter-quarters. This is doubtless for the greater safety of the young birds.

The next fall, the downy excavated another limb in the old apple-tree, but had not got his retreat quite finished, when the large hairy woodpecker appeared upon the scene. I heard his loud *click, click*, early one frosty November morning. There was something impatient and angry in the tone that arrested my attention. I saw the bird fly to the tree where downy had been at work, and fall with great violence upon the entrance to his cavity. The bark and the chips flew beneath his vigorous blows, and before I fairly

woke up to what he was doing, he had completely demolished the neat, round doorway of downy. He had made a large ragged opening large enough for himself to enter. I drove him away and my favorite came back, but only to survey the ruins of his castle for a moment and then go away. He lingered about for a day or two and then disappeared. The big hairy usurper passed a night in the cavity, but on being hustled out of it the next night by me, he also left, but not till he had demolished the entrance to a cavity in a neighboring tree where downy and his mate had reared their brood that summer, and where I had hoped the female would pass the winter.

NOTES BY THE WAY.

I. THE WEATHER-WISE MUSKRAT.

I AM more than half persuaded that the muskrat is a wise little animal, and that on the subject of the weather, especially, he possesses some secret that I should be glad to know. In the fall of 1878 I noticed that he built unusually high and massive nests. I noticed them in several different localities. In a shallow, sluggish pond by the roadside, which I used to pass daily in my walk, two nests were in process of construction throughout the month of November. The builders worked only at night, and I could see each day that the work had visibly advanced. When there was a slight skim of ice over the pond, this was broken up about the nests, with trails through it in different directions where the material had been brought. The houses were placed a little to one side of the main channel, and were constructed entirely of a species of coarse wild grass that grew all about. So far as I could see, from first to last they were solid masses of grass, as if the interior cavity or nest was to be excavated afterward, as doubtless it was. As they emerged from the pond they gradually assumed the shape of a miniature mountain, very bold and steep on the south side, and running down a long gentle grade to the surface of the water on the north. One could see that the little architect hauled all his material up this easy slope, and thrust it out boldly

around the other side. Every mouthful was distinctly defined. After they were two feet or more above the water, I expected each day to see that the finishing stroke had been given and the work brought to a close. But higher yet, said the builder. December drew near, the cold became threatening, and I was apprehensive that winter would suddenly shut down upon those unfinished nests. But the wise rats knew better than I did ; they had received private advices from headquarters that I knew not of. Finally, about the 6th of December, the nests assumed completion ; the northern incline was absorbed or carried up, and each structure became a strong massive cone, three or four feet high, the largest nest of the kind I had ever seen. Does it mean a severe winter ? I inquired. An old farmer said it meant "high water," and he was right once, at least, for in a few days afterward we had the heaviest rainfall known in this section for half a century. The creeks rose to an almost unprecedented height. The sluggish pond became a seething, turbulent watercourse ; gradually the angry element crept up the sides of these lake dwellings, till, when the rain ceased, about four o'clock they showed above the flood no larger than a man's hat. During the night the channel shifted till the main current swept over them, and next day not a vestige of the nests was to be seen ; they had gone down-stream, as had many other dwellings of a less temporary character. The rats had built wisely, and would have been perfectly secure against any ordinary high water, but who can foresee a flood ? The oldest traditions of their race did not run back to the time of such a visitation.

Nearly a week afterward another dwelling was begun, well away from the treacherous channel, but

the architects did not work at it with much heart ; the material was very scarce, the ice hindered, and before the basement-story was fairly finished, winter had the pond under his lock and key.

In other localities I noticed that where the nests were placed on the banks of streams, they were made secure against the floods by being built amid a small clump of bushes. When the fall of 1879 came, the muskrats were very tardy about beginning their house, laying the corner-stone — or the corner-sod — about December 1st, and continuing the work slowly and indifferently. On the 15th of the month the nest was not yet finished. This, I said, indicates a mild winter ; and, sure enough, the season was one of the mildest known for many years. The rats had little use for their house.

Again, in the fall of 1880, while the weather-wise were wagging their heads, some forecasting a mild, some a severe winter, I watched with interest for a sign from my muskrats. About November 1st, a month earlier than the previous year, they began their nest, and worked at it with a will. They appeared to have just got tidings of what was coming. If I had taken the hint so palpably given, my celery would not have been frozen in the ground, and my apples caught in unprotected places. When the cold wave struck us, about November 20th, my four-legged "I-told-you-so's" had nearly completed their dwelling ; it lacked only the ridge-board, so to speak ; it needed a little "topping out," to give it a finished look. But this it never got. The winter had come to stay, and it waxed more and more severe, till the unprecedented cold of the last days of December must have astonished even the wise muskrats in their snug retreat.

I approached their nest at this time, a white mound upon the white, deeply frozen surface of the pond, and wondered if there was any life in that apparent sepulchre. I thrust my walking-stick sharply into it, when there was a rustle and a splash into the water, as the occupant made his escape. What a damp basement that house has, I thought, and what a pity to rout a peaceful neighbor out of his bed in this weather, and into such a state of things as this! But water does not wet the muskrat; his fur is charmed, and not a drop penetrates it. Where the ground is favorable, the muskrats do not build these mound-like nests, but burrow into the bank a long distance, and establish their winter-quarters there.

Shall we not say, then, in view of the above facts, that this little creature is weather-wise? The hitting of the mark twice might be mere good luck; but three bull's-eyes in succession is not a mere coincidence; it is a proof of skill. The muskrat is not found in the Old World, which is a little singular, as other rats so abound there, and as those slow-going English streams especially, with their grassy banks, are so well suited to him. The water-rat of Europe is smaller, but of similar nature and habits. The muskrat does not hibernate like some rodents, but is pretty active all winter. In December I noticed in my walk where they had made excursions of a few yards to an orchard for frozen apples. One day, along a little stream, I saw a mink track amid those of the muskrat; following it up, I presently came to blood and other marks of strife upon the snow beside a stone wall. Looking in between the stones, I found the carcass of the luckless rat, with its head and neck eaten away. The mink had made a meal of him.

II. CHEATING THE SQUIRRELS.

FOR the largest and finest chestnuts I had last fall I was indebted to the gray squirrels. Walking through the early October woods one day, I came upon a place where the ground was thickly strewn with very large unopened chestnut burs. On examination I found that every bur had been cut square off with about an inch of the stem adhering, and not one had been left on the tree. It was not accident, then, but design. Whose design? The squirrels'. The fruit was the finest I had ever seen in the woods, and some wise squirrel had marked it for his own. The burs were ripe, and had just begun to divide, not "threefold," but fourfold, "to show the fruit within." The squirrel that had taken all this pains had evidently reasoned with himself thus: "Now, these are extremely fine chestnuts, and I want them; if I wait till the burs open on the tree the crows and jays will be sure to carry off a great many of the nuts before they fall; then, after the wind has rattled out what remain, there are the mice, the chipmunks, the red squirrels, the raccoons, the grouse, to say nothing of the boys and the pigs, to come in for their share; so I will forestall events a little; I will cut off the burs when they have matured, and a few days of this dry October weather will cause every one of them to open on the ground; I shall be on hand in the nick of time to gather up my nuts." The squirrel, of course, had to take the chances of a prowler like myself coming along, but he had fairly stolen a march on his neighbors. As I proceeded to collect and open the burs, I was half prepared to hear an audible protest from the

trees about, for I constantly fancied myself watched by shy but jealous eyes. It is an interesting inquiry how the squirrel knew the burs would open if left to lie on the ground a few days. Perhaps he did not know, but thought the experiment worth trying.

The gray squirrel is peculiarly an American product, and might serve very well as a national emblem. The Old World can beat us on rats and mice, but we are far ahead on squirrels, having five or six species to Europe's one.

III. FOX AND HOUND.

I STOOD on a high hill or ridge one autumn day and saw a hound run a fox through the fields far beneath me. What odors that fox must have shaken out of himself, I thought, to be traced thus easily, and how great their specific gravity not to have been blown away like smoke by the breeze! The fox ran a long distance down the hill, keeping within a few feet of a stone wall; then turned a right angle and led off for the mountain, across a plowed field and a succession of pasture lands. In about fifteen minutes the hound came in full blast with her nose in the air, and never once did she put it to the ground while in my sight. When she came to the stone wall she took the other side from that taken by the fox, and kept about the same distance from it, being thus separated several yards from his track, with the fence between her and it. At the point where the fox turned sharply to the left, the hound overshot a few yards, then wheeled, and feeling the air a moment with her nose, took up the scent again and was off on his trail

as unerringly as fate. It seemed as if the fox must have sowed himself broadcast as he went along, and that his scent was so rank and heavy that it settled in the hollows and clung tenaciously to the bushes and crevices in the fence. I thought I ought to have caught a remnant of it as I passed that way some minutes later, but I did not. But I suppose it was not that the light-footed fox so impressed himself upon the ground he ran over, but that the sense of the hound was so keen. To her sensitive nose these tracks steamed like hot cakes, and they would not have cooled off so as to be undistinguishable for several hours. For the time being she had but one sense: her whole soul was concentrated in her nose.

It is amusing when the hunter starts out of a winter morning to see his hound probe the old tracks to determine how recent they are. He sinks his nose down deep in the snow so as to exclude the air from above, then draws a long full breath, giving sometimes an audible snort. If there remains the least effluvium of the fox the hound will detect it. If it be very slight it only sets his tail wagging; if it be strong it unloosens his tongue.

Such things remind one of the waste, the friction that is going on all about us, even when the wheels of life run the most smoothly. A fox cannot trip along the top of a stone wall so lightly but that he will leave enough of himself to betray his course to the hound for hours afterward. When the boys play "hare and hounds" the hare scatters bits of paper to give a clew to the pursuers, but he scatters himself much more freely if only our sight and scent were sharp enough to detect the fragments. Even the fish leave a trail in the water, and it is said the otter will pursue them

by it. The birds make a track in the air, only their enemies hunt by sight rather than by scent. The fox baffles the hound most upon a hard crust of frozen snow ; the scent will not hold to the smooth, bead-like granules.

Judged by the eye alone, the fox is the lightest and most buoyant creature that runs. His soft wrapping of fur conceals the muscular play and effort that is so obvious in the hound that pursues him, and he comes bounding along precisely as if blown by a gentle wind. His massive tail is carried as if it floated upon the air by its own lightness.

The hound is not remarkable for his fleetness, but how he will hang ! — often running late into the night and sometimes till morning, from ridge to ridge, from peak to peak ; now on the mountain, now crossing the valley, now playing about a large slope of uplying pasture fields. At times the fox has a pretty well-defined orbit, and the hunter knows where to intercept him. Again he leads off like a comet, quite beyond the system of hills and ridges upon which he was started, and his return is entirely a matter of conjecture ; but if the day be not more than half spent, the chances are that the fox will be back before night, though the sportsman's patience seldom holds out that long.

The hound is a most interesting dog. How solemn and long-visaged he is — how peaceful and well-disposed ! He is the Quaker among dogs. All the viciousness and currishness seem to have been weeded out of him ; he seldom quarrels, or fights, or plays, like other dogs. Two strange hounds, meeting for the first time, behave as civilly toward each other as two men. I know a hound that has an ancient, wrin-

kled, human, far-away look that reminds one of the bust of Homer among the Elgin marbles. He looks like the mountains toward which his heart yearns so much.

The hound is a great puzzle to the farm dog ; the latter, attracted by his baying, comes barking and snarling up through the fields bent on picking a quarrel ; he intercepts the hound, snubs and insults and annoys him in every way possible, but the hound heeds him not ; if the dog attacks him he gets away as best he can, and goes on with the trail ; the cur bristles and barks and struts about for a while, then goes back to the house, evidently thinking the hound a lunatic, which he is for the time being — a monomaniac, the slave and victim of one idea. I saw the master of a hound one day arrest him in full course, to give one of the hunters time to get to a certain runaway ; the dog cried and struggled to free himself and would listen neither to threats nor caresses. Knowing he must be hungry, I offered him my lunch, but he would not touch it. I put it in his mouth, but he threw it contemptuously from him. We coaxed and petted and reassured him, but he was under a spell ; he was bereft of all thought or desire but the one passion to pursue that trail.



IV. THE WOODCHUCK

WRITERS upon rural England and her familiar natural history make no mention of the marmot or woodchuck. In Europe this animal seems to be confined to the high mountainous districts, as on our

Pacific slope, burrowing near the snow line. It is more social or gregarious than the American species, living in large families like our prairie-dog. In the Middle and Eastern States our woodchuck takes the place, in some respects, of the English rabbit, burrowing in every hillside and under every stone wall and jutting ledge and large boulder, from whence it makes raids upon the grass and clover and sometimes upon the garden vegetables. It is quite solitary in its habits, seldom more than one inhabiting the same den, unless it be a mother and her young. It is not now so much a *wood* chuck as a *field* chuck. Occasionally, however, one seems to prefer the woods, and is not seduced by the sunny slopes and the succulent grass, but feeds, as did his fathers before him, upon roots and twigs, the bark of young trees, and upon various wood plants.

One summer day, as I was swimming across a broad, deep pool in the creek in a secluded place in the woods, I saw one of these sylvan chucks amid the rocks but a few feet from the edge of the water where I proposed to touch. He saw my approach, but doubtless took me for some water-fowl, or for some cousin of his of the muskrat tribe ; for he went on with his feeding, and regarded me not till I paused within ten feet of him and lifted myself up. Then he did not know me, having, perhaps, never seen Adam in his simplicity, but he twisted his nose around to catch my scent ; and the moment he had done so he sprang like a jumping-jack and rushed into his den with the utmost precipitation.

The woodchuck is the true serf among our animals ; he belongs to the soil, and savors of it. He is of the earth, earthy. There is generally a decided odor about

his dens and lurking-places, but it is not at all disagreeable in the clover-scented air, and his shrill whistle, as he takes to his hole or defies the farm dog from the interior of the stone wall, is a pleasant summer sound. In form and movement the woodchuck is not captivating. His body is heavy and flabby. Indeed, such a flaccid, fluid, pouchy carcass, I have never before seen. It has absolutely no muscular tension or rigidity, but is as baggy and shaky as a skin filled with water. Let the rifleman shoot one while it lies basking on a sidelong rock, and its body slumps off, and rolls and spills down the hill, as if it were a mass of bowels only. The legs of the woodchuck are short and stout, and made for digging rather than running. The latter operation he performs by short leaps, his belly scarcely clearing the ground. For a short distance he can make very good time, but he seldom trusts himself far from his hole, and when surprised in that predicament, makes little effort to escape, but, grating his teeth, looks the danger squarely in the face.

I knew a farmer in New York who had a very large bob-tailed churn-dog by the name of Cuff. The farmer kept a large dairy and made a great deal of butter, and it was the business of Cuff to spend nearly the half of each summer day treading the endless round of the churning-machine. During the remainder of the day he had plenty of time to sleep, and rest, and sit on his hips and survey the landscape. One day, sitting thus, he discovered a woodchuck about forty rods from the house, on a steep side-hill, feeding about near his hole, which was beneath a large rock. The old dog, forgetting his stiffness, and remembering the fun he had had with woodchucks in his earlier

days, started off at his highest speed, vainly hoping to catch this one before he could get to his hole. But the woodchuck, seeing the dog come laboring up the hill, sprang to the mouth of his den, and, when his pursuer was only a few rods off, whistled tauntingly and went in. This occurred several times, the old dog marching up the hill, and then marching down again, having had his labor for his pains. I suspect that he revolved the subject in his mind while he revolved the great wheel of the churning-machine, and that some turn or other brought him a happy thought, for next time he showed himself a strategist. Instead of giving chase to the woodchuck when first discovered, he crouched down to the ground, and, resting his head on his paws, watched him. The woodchuck kept working away from the hole, lured by the tender clover, but, not unmindful of his safety, lifted himself up on his haunches every few moments and surveyed the approaches. Presently, after the woodchuck had let himself down from one of these attitudes of observation, and resumed his feeding, Cuff started swiftly but stealthily up the hill, precisely in the attitude of a cat when she is stalking a bird. When the woodchuck rose up again, Cuff was perfectly motionless and half hid by the grass. When he again resumed his clover, Cuff sped up the hill as before, this time crossing a fence, but in a low place, and so nimbly that he was not discovered. Again the woodchuck was on the outlook, again Cuff was motionless and hugging the ground. As the dog nears his victim he is partially hidden by a swell in the earth, but still the woodchuck from his outlook reports "all right," when Cuff, having not twice as far to run as the 'chuck, throws all stealthiness aside and rushes di-

rectly for the hole. At that moment the woodchuck discovers his danger, and, seeing that it is a race for life, leaps as I never saw marmot leap before. But he is two seconds too late, his retreat is cut off, and the powerful jaws of the old dog close upon him.

The next season Cuff tried the same tactics again with like success ; but when the third woodchuck had taken up his abode at the fatal hole, the old churner's wits and strength had begun to fail him, and he was baffled in each attempt to capture the animal.

The woodchuck always burrows on a side-hill. This enables him to guard against being drowned out, by making the termination of the hole higher than the entrance. He digs in slantingly for about two or three feet, then makes a sharp upward turn and keeps nearly parallel with the surface of the ground for a distance of eight or ten feet farther, according to the grade. Here he makes his nest and passes the winter, holing up in October or November and coming out again in April. This is a long sleep, and is rendered possible only by the amount of fat with which the system has become stored during the summer. The fire of life still burns, but very faintly and slowly, as with the draughts all closed and the ashes heaped up. Respiration is continued, but at longer intervals, and all the vital processes are nearly at a standstill. Dig one out during hibernation (Audubon did so), and you find it a mere inanimate ball, that suffers itself to be moved and rolled about without showing signs of awakening. But bring it in by the fire, and it presently unrolls and opens its eyes, and crawls feebly about, and if left to itself will seek some dark hole or corner, roll itself up again, and resume its former condition.

D. H. HILL LIBRARY

North Carolina State College

North Carolina State University Libraries

QH81 .B9563

SHARP EYES AND OTHER PAPERS



S02775196 M

